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ABSTRACT

Presented for environmental designers and program planners serving handicapped children in urban settings is information on using the natural environment both as a therapeutic modality and to facilitate child development; planning, administering, and evaluating innovative educational recreational and camping programs; and developing standards for architectural modifications and barrier-free design. Included is a bibliography containing approximately 280 references arranged alphabetically by author or source within the following categories: general references; physical and motor development; perceptual development; behavior/personality/affective development; intellectual/cognitive/language development; program planning, administration, and evaluation in the natural environment; and architectural modifications/barrier-free design. (LH)

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# THE NATURAL ENVIRONMENT AND HUMAN DEVELOPMENT: IMPLICATIONS FOR HANDICAPPED CHILDREN IN URBAN SETTINGS

By

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# INTRODUCTION

This paper has been prepared as a resource for participants in the symposium-fair, Children, Nature and the Urban Environment held on May 19 through May 23, 1975 in Washington, D.C. It was prepared in the hope that participants, during their discussions, interchanges, and deliberations, will be constantly mindful of the fact that fully 15 percent of the nation's children and youth are afflicted with some form of handicapping condition.

These children, be they physically or mentally handicapped; deaf, blind, or speach impaired; learning disabled or emotionally disturbed; face very unique and special problems which make it especially difficult for them to participate in those life experiences which are the birthright of all the nation's children.

Therefore, it is imperative that those who design the environments in which children must live and learn and those who design the programs which utilize these environments, be aware of and knowledgable about the special problems of handicapped children. In the final analysis, the ultimate goal must be the design of environments and programs which meet the needs of all children.

To provide relevant input for the symposium participants, the authors identified three major topical areas which are generally representative of the topics to be presented and discussed during the symposium sessions. They are (1) the value of the natural environment in the growth and development of handicapped children; (2) the natural environment: program planning, administration, and evaluation; and (3) architectural modifications/ barrier-free design.

A thorough search of the literature was then undertaken for each topical area to identify and review relevant research and literature dealing with handicapped children and youth. What follows is a summary discussion of the results of that search. Included in the appendix is an annotated bibliography of over 100 articles and research studies which the authors feel have implications for the topics to be considered during the symposium.

During the week the symposium is in progress, specially trained teams will monitor all presentations. These teams will evaluate the information presented in light of its applicability to handicapped children. Specific recommendations will then be developed to serve as guidelines for designers and program planners so as to guarantee that the special problems and needs of handicapped children are provided for in the overall design and planning process. These recommendations will be presented to participants during a panel discussion on the last day of the symposium.

## THE VALUE OF THE NATURAL ENVIRONMENT IN THE GROWTH AND DEVELOPMENT OF HANDICAPPED CHILDREN

In the human services professions, there is a growing recognition and acceptance of the significant role that the natural environment can play in the lives of handicapped children. Although limited, existing research indicates that the natural environment can provide a fertile medium for the physical, emotional, intellectual, and social development of the disabled child. Additionally, implications for the use of the natural environment as a therapeutic modality can be discerned from studies of the detrimental effects of isolation, hospitalization, and institutionalization and the positive effects of exploration, free play, and the home environment.

A more detailed review of the literature is presented below in four topical areas: physical and motor development; perceptual development; behavioral, personality, and affective development; and intellectual, cognitive, and language development.

Physical and Motor Development

The physical and motor abilities of children with handicapping conditions are not uniform for all handicaps or for all children within one disability group. However, research has shown that for many disabled children, physical and motor development may be retarded by environmental conditions related to disability such as institutionalization and isolation. Other research has shown that for some disability groups, physical and motor development can be enhanced by the provision of physically based learning experiences in a play environment.

Perceptual Development

The available research indicates that perceptual development is independent of intellectual development in the mentally retarded and that haptic perceptual development is similar for blind and sighted children. Since, in these skill areas, the mentally retarded and blind can approximate the performance levels of their normal peers, it can be inferred that provision of opportunities to develop these skills through play can provide the disabled child with success-oriented experiences. It can be further theorized that these successes may be of value in enhancing self-attitudes and may have carry-over value for improving attitudes in other areas as well. Further research is needed to substantiate these inferrences.

Behavioral, Personality, and Affective Development

Numerous studies have been reported concerning the self-concept and various dimensions of the self-concept of handicapped children. It is generally accepted that lower self-concepts found among disabled children are due primarily to environmental factors related to the disability and that enhancement of self-attitudes can be effected through programs in which the environment is manipulated so that the child is able to perceive himself in positive ways. Similarly, in other areas of personality and social development, research indicates that environmental manipulation can be of benefit to the disabled child.

Intellectual/Cognitive/Language Development

The effect of the natural environment on intellectual, cognitive, and language development has been investigated in several recreation and school camps, as well as in recreation oriented education programs. The results of these studies indicate that camping and recreation in general can be of benefit for the mentally retarded, learning disabled, blind, and deaf in improving communication and academic skills.

## THE NATURAL ENVIRONMENT: PROGRAM PLANNING, ADMINISTRATION, AND EVALUATION

Growing interest in the use of the natural environment in programs for children with handicapping conditions has been accompanied by the publication of a considerable amount of descriptive literature pertaining to innovative ideas in programming and program administration. The breadth and diversity of recently developed environmental programs and the increasing academic involvement in the field has also resulted in a limited number of research studies. However, to date, the scientific body of knowledge

concerning the planning, administration, and evaluation of programs for the handicapped in which the natural environment is utilized contains many large, easily identifiable gaps.

The following summarization of the literature has been subdivided into two major categories; programs and administration. The paucity of literature in the area of evaluation necessitated the inclusion of this topic under administration.

Programs

Environmental programs for handicapped children have been implemented in a myriad of settings utilizing diverse types of activities for the purpose of achieving a variety of therapeutic and recreational goals. Within the public school systems, environmental programs have been developed for the mentally retarded and learning disabled to facilitate the improvement of academic skills and attitudes. Schools have also used environmental programs with all handicapped groups to enhance physical and social skills, as well as self-attitudes. The activities in these programs have varied from highly structured nature studies and traditional recreation to individualized environmental exploration.

Environmental programs for the handicapped have also been implemented in the community under the sponsorship of youth organizations such as the Girl Scouts, Boy Scouts, and YM and YWCA's. Like the environmental programs in the schools, these programs consist of activities which are both traditional and innovative. Unlike the school programs, however, their objectives are usually not stated in terms of specific physical, emotional, and intellectual benefits.

Community-based programs have also been sponsored by municipal recreation departments, universities, voluntary health agencies, and private organizations. Their activities vary according to the philosophy and goals of the sponsoring agency. Some, like the schools, establish their programs to achieve specific therapeutic objectives. Others, like the youth organizations, offer a purely recreational program which is based on the philosophy that activities which use the natural environment are inherently therapeutic.

Outside of the urban community, environmental programs for the handicapped can be found in organized camps, as well as in federal and state parks. Programs in organized camps, like their city counterparts, reflect the philosophical orientations of their sponsoring agencies. The majority of camp programs described in the literature are therapeutic camps and, consequently, integrate therapeutic techniques into traditional camping activities to achieve their set goals. In the parks, services have been expanded in recent years to include not only accessible outdoor facilities, but also total environmental programming for the handicapped.

Two major trends in environmental programs for the handicapped are the integration of handicapped with non-handicapped participants (mainstreaming) and year-around programming. Integration of the handicapped with the non-handicapped has been described in the literature for every major disability type and both successful and unsuccessful integration have been documented. Although the issue of when and how integration is successfully achieved has not been resolved, some answers are being provided by demonstration projects and research studies.

Year-around programming is a relatively new trend gaining impetus across the nation, particularly with regard to camp programs. It is being offered as a solution to the problems created by the financial wastes entailed in restrictive seasonal usage of facilities and staff. Limited descriptions and discussions are available in the literature but the overall impact of year-around programming has not yet been assessed and documented.

Administration

As noted in the previous section, a diverse group of public, private, and voluntary organizations are involved in the provision of environmental programs to special populations. Despite their diversity, these organizations share certain administrative concerns. Of high priority are funding and staff development.

The problem of inadequate funding has prompted interested agencies in several communities to pool their resources. These interagency cooperative efforts have resulted in the enlargement of existing programs and the establishment of new ones. Concomitant benefits have included less overlapping of services and a more efficient use of facilities and staff.

In other communities, the lack of adequate funding for programs is being partially resolved by the greater use of volunteers. Novel sources of volunteers cited in the literature include Vista workers, members of senior citizen groups, older persons with handicapping conditions, and reformatory inmates.

Cooperative planning and the increased usage of volunteers are, for some, relieving the economic pressure. However, they are not end-all measures and a repeated theme in the literature is the need for new funding sources.

Another administrative problem about which a considerable amount has been published in the literature is staff selection and development. Although it is generally agreed that staff working with the handicapped in an environmental program need specialized training, there appears to be little agreement on the type or extent of necessary training.

During the spring of 1972, a major national conference on training needs for personnel in camping and outdoor and environmental recreation for handicapped children was sponsored by the Bureau of Education for the Handicapped and San Jose State University. The conference brought together approximately 50 individuals from across the nation representing the major organizations providing environmental programs for the handicapped. Using a modified Delphi technique, the conference participants developed a broad ranging position statement on training in camping and outdoor and environmental recreation for the handicapped. This statement, together with additional position statements and conference proceedings, was included in Training Needs and Strategies in Camping for the Handicapped published by the University of Oregon Press in 1972. To date, there is little evidence that recommendations emanating from this conference have been implemented.

One topic identified in the conference as an area which needs further study was program evaluation. Although considerable research has been reported concerning the physical, psychological, educational, and social effects of specific programs which use the natural environment as a therapeutic modality, few investigations have been reported which were concerned with overall program evaluation. Additionally, in every study of the effects of an environmental program, the program was generally described, but never quantitatively or qualitatively defined. Thus, replicating successful programs remains a difficult task and evaluating failures remains guesswork.

## ARCHITECTURAL MODIFICATIONS/BARRIER-FREE DESIGN

The movement for changing the barrier-ridden environment of the handicapped individual to one of mobility and freedom has gained impetus from many directions. Through laws, technological and architectural innovations, and the inexhaustible determination of dedicated individuals, many discriminating architectural barriers have been eliminated. The current literature on accessibility, mobility, and barrier free design reflects the multi-disciplinary nature of this topic. The broad scope of the topic has necessitated its subdivision into five areas of concern: standards, legislation, design, mobility, and listings of guides and directories.

### Standards

Standards which are utilized for barrier free construction in buildings and outdoor facilities have emanated from a number of sources. The standards which apply to public buildings were developed by the American National Standards Institute and can be obtained from the National Society for Crippled Children and Adults or from the President's Committee on Employment of the Handicapped. The American Camping Association has established standards for all member camps who serve one or more physically handicapped persons. Their standards cover not only buildings, but also the design of all recreational areas at a camp site. Other design standards for outdoor recreation areas have been published by the Bureau of Outdoor Recreation and various state departments of parks, outdoor recreation, and conservation.

Legislation

With the passage of Public Law 90-480, buildings constructed with public funds were required to be totally accessible to all persons. Surveys of subsequent state legislation, however, have indicated that, in many cases, provisions for enforcement are inadequate and that the laws do not apply to public-use buildings as well as publicly funded buildings. Stricter enforcement of existing laws and further alleviation of architectural barriers is presently being fought in the courts by disabled individuals seeking equal accessibility in every facet of their daily lives. A prevailing argument is that access is implicit in the concept of equality under the law and that architectural barriers in public buildings are forms of discrimination.

Design

Architectural modifications needed by physically impaired persons in homes, rehabilitation centers, schools, public buildings, and outdoor facilities are referenced in the literature. In general, the key factors in creating a comfortable and accessible environment are practicality and simplicity of design.

The movement for accessibility has been enthusiastically supported by the American Institute of Architects. Their advocacy is evidenced by the plethora of literature available on barrier free design and the increased sensitivity of professional architects to the mobility problems of the handicapped. In many colleges of architecture today, students are required to tour buildings in wheelchairs in order to gain insight into the design needs of the physically handicapped.

Mobility

Mobility denotes movement from one position to another. For many physically handicapped individuals, mobility is severely limited without wheelchairs, orthodic and prosthetic devices, and other self-help aids. Mobility also denotes movement from one place to another and, fortunately for the physically handicapped, an increasing number of cities are now making their public transportation systems accessible. Long distance travel for the physically handicapped is also becoming easier since most airlines, passenger ships, and trains have special services available upon request. Additionally, many hotel and motel chains are now able to accommodate the handicapped. Perhaps one of the most noticeable indications of increasing opportunities for mobility is the large number of access signs along the highways signifying that rest areas are barrier free.

Listings of Guides and Directories

Numerous listings are available concerning facilities accessible to the handicapped. The majority of listings contain information for the disabled traveler such as guides to airports and directories of hotels, motels, and restaurants. Listings are also available for recreational areas, parks, camps, and schools.

BIBLIOGRAPHY

## BIBLIOGRAPHY

## The Value of the Natural Environment in the Growth and Development of Handicapped Children

### General References


Balla, David A., Butterfield, Earl C., and Zigler, Edward.
1974. Effects of institutionalization on retarded children: a longitudinal cross-institutional investigation. Am. Journ. of Ment. Def. 78(March): 530-549.

103 consecutive admissions to 4 institutions with mental ages of at least 3 years were given a battery of tests. S's still in institutions 2.5 years later were re-tested. MA's and behavior variability increased and verbal dependency and imitation decreased over this time. The effect of institutionalization was found related to many variables, including pre-institution history, environment of facility, sex, and diagnosis.

Birch, H.G., Thomas, A., and Chess, S.
1964. Behavioral development in brain-damaged children. Arch. Gen. Psychiat. 110: 596-603.

Behavior in infancy, motor, speech, and intellectual development, and social behavior are described from birth to school age. This article is especially relevant to parents of children categorized as brain-damaged.

Bolton, Brian.
1972. A profile of the multiply handicapped deaf young adult. Journ. of Rehab. of Deaf 5(April): 7-11.

Data on 145 multiply disabled young adults were compiled to present a profile of characteristics: demographic, developmental, family, educational, and employment. Most S's were from lower middle class families and had poor communication skills, low school achievement, and slowed emotional development.

Elonen, Anna S., and Zwarensteyn, Sarah H.
1964. Appraisal of developmental lag in certain blind children. Journ. of Pediat. 65(Oct.): 599-610.

Discusses individual differences in development of blind children using case histories and observations of blind children. Development of daily living skills, sensori-motor skills, speech and language, and mental development are covered. Concludes that changing the attitudes of parents and professionals so that "pseudoconditions" (behavior that resembles that of an emotionally disturbed, retarded, brain-damaged, or autistic child) are prevented is imperative.

Freeman, Roger D.
1967. Emotional reactions of handicapped children. Rehab. Lit. 28(Sept.): 274-282.

Discusses reactions of parents to handicapped children and the difficulties in motor development, physical growth, socialization, and personality development the child faces. Statistics which link particular handicaps to specific developmental problems are unavailable. Need for emotional support is emphasized.

Friedman, C. Jack, Sibinga, Maarten S., Steisel, Ira M., and Sinnamon, Harry M.
1972. Sensory restriction and isolation experiences in children with phenylketonuria. In E.P. Trapp and P. Himelstein, eds., Readings on the Exceptional Child, 2nd ed. New York: Appleton-Century-Crofts, 179-196.

30 4-13 year old children with diagnosis of phenylketonuria who were in a hospital treatment program were observed in an interaction situation and given intelligence tests. S's who had had isolation experiences were more impaired in social and interpersonal behavior, in language comprehension and intellectual functioning, and were more frequently characterized by personality disorder.

Havighurst, Robert.
1965. Camping helps youngsters with developmental tasks. Camping Mag. 37(May): 13-14.

Author looks at the developmental tasks of 9-14 year olds, which he concluded fall into a natural relation with each other in a camp setting: (1) learning physical skills, (2) acquiring wholesome attitudes toward the body, (3) learning to get along with peers, (4)becoming morally independent, (5) becoming physically independent and beginning to be emotionally independent of adults, (6) acquiring necessary concepts of physical and social world, and (7) acquiring social skills.

Illingworth, R.S.
1972. The development of the infant and young child: normal and abnormal, 5th ed. Baltimore: Williams and Wilkins.

Discusses developmental testing, factors which influence development (environment, prenatal care), and normal development. Individual variations in development, mental retardation, and cerebral palsy are also covered.

Kappelman, Murray M., Rosenstein, Alfred B., and Ganter, Robert L.
1972. Comparison of disadvantaged children with learning disabilities and their successful peer group. Am. Journ. of Diseases of Childr. 124(Dec.): 875-879.

Questionnaires were administered to disadvantaged learning disabled children and matched controls. Key factors contributing to learning disabilities are family history, toxemia in pregnancy, breech birth, low birth weight , and social-family factors (number of siblings, education of mother, and family composition.)

Lefebvre, Claudette B.
1972. The comparative effects of three- and six-week periods of residential camping on physical fitness and adaptive behavior in children and youth with brain dysfunction syndromes. Disser. Abs. Internat. 33(1A, July): 200-201.

7-21 year old S's with a variety of disabilities were given behavior and physical fitness tests before and after 3 or 6 weeks of camp. All increased in physical fitness and adaptive behavior, with the 6-week campers having sig. greater gains in adaptive behavior. No age or sex differences noted.

Menser, Margaret A., Dods, Lorimer, and Harley, J.D.
1967. A twenty-five-year follow-up of congenital rubella. Lancet 7530(Dec. 23): 1347-1350.

Assessed 50 people born in New South Wales after rubella epidemic of 1940. Disabilities included deafness, eye problems, low height or weight, skeletal deformities, diabetes, cardiovascular problems, and sterility. Majority were educationally or occupationally well-adjusted, indicating that their developmental potential had been misjudged when they were children.

Stedman, Donald J., and Eichorn, Dorothy H.
1964. A comparison of the growth and development of institutionalized and home reared mongoloids during infancy and early childhood. Am. Journ. of Ment. Def. 69: 391-401.

17-37 month old mongoloids in a state hospital and living at home were given a battery of tests. Home reared scored higher on mental and social scales, but differences in motor ability were not significant between the two groups. Groups were fairly comparable in physical development.

Stimson, Cyrus W., Geake, Robert, and Weir, Homer.
1968. Effects of early institutionalization on growth and development of young children with Down's syndrome. Mich. Med. 67(Oct.): 1213-1218.

Institutionalized and home-reared Down's children were compared as to height, weight; age walked independently, talked intelligibly, fed self, and was toilet trained; IQ and SQ. Most sig. difference found was in superior speech of home-reared. This article indicates, in general, that a mongoloid child's growth and development will be enhanced if he remains at home.

Physical and Motor Development

Adelson, Edna, and Fraiberg, Selma.
1974. Gross motor development in infants blind from birth. Ch. Devel. 45(Mar.): 114-126.

Infants blind from birth were observed at home and compared to blind infants from another study and to normal infants. Found that these infants were delayed in developing skills needed for mobility but were not delayed in postural development.

Bobath, Berta.
1971. Motor development, its effect on general development, and application to the treatment of cerebral palsy. Physiotherapy 57(Nov.): 526-532.

Movement is seen as extremely important for the child's general development, with early sensorimotor experiences considered a basis for later learning. This knowledge must be applied when treating the CP child, with specific treatments for correcting developmental deficits needed.

Bobath, K.
1971. The normal postural reflex mechanism and its deviation in children with cerebral palsy. Physiotherapy 57(Nov.): 515-525.

Defines cerebral palsy and discusses normal brain functions and the normal postural reflex. Abnormal postural reflex in CP results in spasticity, rigidity, or athetoid spasms; treatment approaches must necessarily be directed toward inhibiting this abnormal reflex.

Boyd, John.
1967. Comparison of motor behavior in deaf and hearing boys. Am. Ann. of Deaf 112(Sept.): 598-605.

8-10 year old deaf boys in day and residential schools and their matched controls were tested for static equilibrium, locomotor coordination, speed, and psychomotor integration. Deaf S's were deficient in static equilibrium, slower in developing locomotor coordination, and equal to hearing S's in speed. Prenatally deaf performed the poorest.

Buell, Charles.
1950. Motor performance of visually-handicapped children. Journ. of Except. Childr. 17(Nov.): 69-72.

Background information on 865 visually impaired children in residential schools and braille classes was obtained and a battery of motor performance tests given. S's were inferior to sighted at all levels of Iowa Brace Test; partially sighted scored higher than totally blind. S's who had lost vision after 6 years adjusted better to physical activities.

Campbell, Robert A., and others.
1968. C/F kids make good campers - the congenitally malformed XV. Northwest Med. 67(May): 458-461.

For 2 years summer camp sessions for school-age CF children were held at Mt. Hood Kiwanis Club for handicapped children. Children demonstrated easy adaptability to the camp program and tolerated vigorous outdoor activity, in addition to apparent enhancement of their physical well-being.

Carlson, B. Robert.
1972. Assessment of motor ability of selected deaf children in Kansas. Percept. and Mot. Skills 34 (Feb.): 303-305.

Residential students were given Brace Motor Ability Test. Scores were slightly higher than those of visually impaired from another study; younger S's performed sig. lower than older S's; only slight sex differences were found. Amount of hearing loss did not affect performance.

Carr, Janet.
1970. Mental and motor development in young mongol children. Journ. of Ment. Def. Res. 14(Sept.): 205-220.

Mongoloid babies and matched normal controls were tested 5 times between 6 wks. and 2 years old. Found that mongols were sig. below normals in mental and motor development at 6 wks., declining rapidly to 10 months, and less rapidly thereafter. After 6 months the institutionalized mongols were inferior to home-reared in mental and motor development. Mean mental scale scores of mongol boys were sig. below girls.

Chasey, William C., Swartz, Jon D., and Chasey, Carol G.
1974. Effect of motor development on body image scores for institutionalized mentally retarded children. Am. Journ. of Ment. Def. 78(Jan.): 440-445.

TMR 10-19 year olds in a state school were randomly assigned to one of 3 groups: Experimental Group (daily physical development program), Hawthorne Control Group (daily sedentary recreation program), and Control Group (no program). All were pre- and post-tested with Holtzman Inkblot. After 5 weeks, penetration responses decreased for Experimental S's, indicating a more positive body image following the motor development program.

Drowatzky, John N.
1968. Effects of a two-week residential camp program upon selected skinfold measures, body weight, and physical fitness of trainable mentally retarded children. Am. Correct. Thera. Journ. 22 (May): 87-91.

TMR males (8-28 years old) participated in at least one hour of moderate physical activity for 14 days at a summer camp. Measures were made before and after camp experience. Mean scores for weight and flabbiness sig. decreased and physical fitness improved.

Francis, Robert J., and Rarick, G. Lawrence.
1959. Motor characteristics of the mentally retarded. Am. Journ. of Ment. Def. 63(March): 792-811.

284 mentally retarded 8-14 year olds attending public school were given measures of static strength, running speed, power, balance, and agility. S's were definitely behind standards for motor performance of normal children, and with increasing age, differences between MR and normal children increased. Age and sex differences followed a pattern similar to normal children, but at a lower level.

French, Ronald W.
1973. Motor development and intellectual functioning: an exploratory study. Inter-Clin. Info. Bull. (ICIB) 12(May): 13-15.

Male and female congenital amputees, 7-16 years old, were studied to assess the necessity of progressing through stages of motor development for normal intellectual development. S's IQs were found to be average or above average, with no relationship between degree of impairment and IQ. Author suggests that stages of motor development of congenital amputees is "unconventional."

Frostig, Marianne.
1968. Sensory-motor development: Spec. Educ. 57(June): 18-20.

Briefly discusses current information about sensory-motor development of normal children. Emphasizes importance of motor development in improving skills and increasing awareness of self and surroundings. Implications for development of handicapped children are presented.

Garfield, Agnes, and Shakespeare, Rosemary.
1964. A psychological and developmental study of mentally retarded children with cerebral palsy. Devel. Med. and Child Neurol. 6(Oct.): 485-494.

Locomotion, oculomotor skills, feeding and dressing skills, toilet training, speech, and sensorimotor development of 3 to 15 year old mentally retarded CP children are discussed. None functioned at a higher developmental age than 3 years. Authors anticipate that as the children age they will show improved locomotion, oculomotor coordination, and feeding and dressing skills, but speech and toilet training will remain the same.

Garfield, John C.
1964. Motor impersistence in normal and brain-damaged children. Neurology 14(July): 623-630.

Brain-damaged S's and normal controls were given motor tasks, such as fixating gaze and sticking out tongue. Brain-damaged S's showed sig. greater inability to sustain the motor task. No sex, age, or intelligence relationships were found.

Goodman, Libby.
1973. The efficacy of visual-motor training for orthopedically handicapped children. Rehab. Lit. 34(Oct.): 299-304.

Preschoolers in classes for the handicapped were given battery of tests before and after an experimental training program. Control group did not receive the training program. No sig. differences were found, suggesting that supplemental visual-motor training has no effect on the performance of orthopedically handicapped children.

Lillie, David L.
1968. The effects of motor development lessons on mentally retarded children. Am. Journ. of Ment. Def. 72(May): 803-808.

Experimental motor development lessons were administered to mentally retarded preschoolers for 5 months. Pre- and post-tests with Lincoln-Oseretsky Motor Development Scale showed that experimental and control groups did not differ in gross motor development, but experimental S's were sig. more proficient in fine motor development.

Linde, Leonard M., Dunn, Olive Jean, Shireson, Ruth, and Rasof, Beatrice.
1967. Growth in children with congenital heart disease. Journ. of Pediat. 70(March): 413-419.

This longitudinal study of children with congenital heart disease and normal controls reports height and weight comparisons. Both height and weight were retarded in S's with heart disease, with weight retardation being more common and severe. S's with cyanosis had more severe height and weight deficiencies.

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Morrison, Delmont, and Pothier, Patricia.
1972. Two different remedial motor training programs and the development of mentally retarded preschoolers. Am. Journ. of Ment. Def. 77(Nov.): 251-258.

27 MR S's were randomly assigned to one of 3 groups: Sensori-Motor (S-M) Training (social reinforcement given for prescribed motor activities), Gross-Motor (G-M) Training (social reinforcement given for casually selected activities), and Attention Group (attention given for casually selected activities). S-M group made sig. greater gains in overall development and gross-motor and language development than other groups.

Oliver, James N.
1972. Physical activity and the psychological development of the handicapped. In J.E. Kane, ed., Psychological Aspects of Physical Education and Sport. London: Routledge and Kegan Paul, 187-208.

Physical growth of handicapped may be retarded due to lack of opportunities for exploration and free play or general deprivation of activity. This, in turn, may retard intellectual growth, emotional development, and social development. Concludes that some type of physical activity is necessary to enhance growth and development of the handicapped.

Pozsonyi, Joseph, and Lobb, Harold.
1967. Growth in mentally retarded children. Journ. of Pediat. 71(Dec.): 865-868.

Physical measurements of 6 to 17 year old children were studied in relation to intelligence. Found that MR children with no encephalic disorders were equal in height and skeletal age to normal children.

Rarick, G. Lawrence.
1973. Motor performance of mentally retarded children. In G.L. Rarick, ed., Physical Activity: Human Growth and Development. New York: Academic Press, 225-256.

Examines physical development of the retarded, various motor abilities, relation between motor performance and intelligence, fitness, influences of special physical education and perceptual-motor training.

Perceptual Development

Brodlie, Jerome F., and Burke, John.
1971. Perceptual learning disabilities in blind children. Percept. and Mot. Skills 32(Feb.): 313-314.

200 blind 5-12 year olds were observed learning to read in normal and special classes. Found errors similar to those made by dyslexic children in 15% of both groups. This exploratory study will be basis for more extensive study of dyslexia in blind children.

Doyle, Marie.
1967. Perceptual skill development - a possible resource for the intellectually handicapped. Am. Journ. of Ment. Def. 71: 776-782.

108 MR children in public schools were given horizontal-vertical illusion tests. Found that chronological age and mental age were independent in predicting perceptual development, and perceptual skills were developed despite low intelligence. Author questions the effect of classroom teaching on MR's and suggests perceptually-oriented curricula as more beneficial.

Flick, Grad L., and Duncan, Caroline.
1973. Perceptual-motor dysfunction in children with sickle cell trait. Percept. and Mot. Skills 36(Feb.): 234.

Obstetric, pediatric, neurologic, and psychological data were collected on S's with sickle cell trait and unaffected S's in a child development program. Preliminary findings indicate that children with sickle-cell trait have perceptual-motor difficulties.

Frostig, Marianne.
1972. Visual perception, integrative functions and academic learning. Journ. of Learn. Dis. 5 (Jan.): 1-15.

Discusses and presents examples illustrative of how exercises in visual perception can also facilitate language, sensorimotor, emotional, mental, and social development. Overlearning and directing attention are some suggested methods of teaching.

Gottesman, Milton.
1971. A comparative study of Piaget's developmental schema of sighted children with that of a group of blind children. Ch. Devel. 42(June): 573-580.

Sighted and totally blind 2-8 year olds, all living at home, were required to identify objects tactually. Found no sig. differences in performance of blind and sighted S's at all age levels except 6-8 years, where sighted S's had lower performance. Data suggests that development of haptic perception is similar for blind and sighted children.

Miranda, Simon B., and Fantz, Robert L.
1973. Visual preferences of Down's syndrome and normal infants. Ch. Devel. 44(Sept.): 555-561.

Down's syndrome and normal infants were compared in their reactions to visual stimuli. Down's S's gave longer attention to stimuli, but their differential response to various stimuli was much less varied than normal S's. Authors stress the use of this visual-preference method in assessing perceptual-cognitive development in infants.

Pick, Anne D., and Pick, Herbert L., Jr.
1966. A developmental study of tactual discrimination in blind and sighted children and adul s. Psychonom. Sci. 6: 367-368.

Sighted (6-13 years old), partially sighted (7-17 years), and totally blind (7-17 years) S's were asked to feel two forms simultaneously and decide whether they were the same or different. Tactual discrimination improved with age in the sighted S's, but no improvement with age was shown by either blind group.

Smith, Hope M.
1968. Motor activity and perceptual development: some implications for physical educators. Journ. of Health, Phys. Educ., and Recr. 39(Feb.): 28-33.

Presents the various theories relating motor activity to perceptual development. Implications for physical educators, such as what kinds of activities are the most beneficial for what purposes, are discussed. Author indicates that this interest in p-m development will increase the value of physical education at the elementary level, influencing college PE curricula.

Worchel, Philip.
1951. Space perception and orientation in the blind. Psychol. Monogr. 65(no. 15): entire issue.

8 to 21 year old blind students at a state school and age- and sex-matched controls (sighted) were tested for tactual form perception, tactual space relation, and space orientation. Sighted S's were superior in tactual form perception, imaginary manipulation of space, and space orientation; blind did equally well in recognizing tactual forms. Age and onset of blindness were related to performance.

Behavioral/Personality/Affective Development

American Camping Association.
1972. Research shows campers improve self concept. Camping Mag. 44(Nov.): 12.

Effects of camping on self concepts of underprivileged children (8-14 years old) were investigated. Results showed sig. positive effects of camping on the campers and how they felt about themselves.

Barcus, Carolyn G., and Bergeson, Roland G.
1972. Survival training and mental health: a review. Thera. Recr. Journ. 6(First Quarter): 3-7.

From a review of the literature in this area, the authors conclude that, although data is limited, there is some evidence that survival training programs produce positive changes in personal functioning. They recommend that control groups and wider variety of tests be used in future research, along with more clearly defined environments and experiences.

Baron, John.
1972. Temperment profile of children with Down's syndrome. Devel. Med. and Ch. Neurol. 14(Oct.): 640-643.

Behavior characteristics of infants with Down's syndrome were compared to those of normal infants. Scores indicate that no differences in behavior exist between normal and D.S. infants.

Biller, Henry B., and Borstelmann, Lloyd J.
1965. Intellectual level and sex role development in mentally retarded children. Am. Journ. of Ment. Def. 70(no. 3): 443-447.

7 to 15 year old institutionalized MR boys and girls were asked to draw a picture and identify the "IT" figure. High and medium IQ boys had sig. higher masculine preference scores than low IQ boys; high and medium IQ girls had higher feminine preference scores than low IQ girls. Data suggests that children with lower IQ's have less definitive sex role development than those in the educable range.

Carroll, Anne Welch.
1967. The effects of segregated and partially integrated school programs on self concept and academic achievement of educable mental retardates. Except. Childr. 34(Oct.): 93-99.

EMR children were given selfconcept tests before and after 8 months of school in either an integrated or segregated setting. EMR's in the segregated setting exhibited less improvement of self concept than the S's in the integrated setting.

Dibner, Susan S., and Dibner, Andrew S.
1973. Integration or segregation for the physically handicapped child? Springfield, Ill.: Charles C. Thomas.

This two-year study dealing with integrated and segregated camping for the physically handicapped resulted in the following findings: (1) conditions of voluntary segregation bring about primarily cooperative behavior, (2) the opposite occurs in integrated situations, and (3) both cooperative and competitive behavior are beneficial when balanced, but detrimental when the other is not present.

Fraiberg, Selma.
1968. Parallel and divergent patterns in blind and sighted infants. The Psychoanalytic Study of the Child. New York: International Universities Press, 264-300.

Sample of totally blind 18 months-6 year old infants were observed in their homes and given developmental tests. Results indicate that blindness need not hinder libidinal object ties in first year of life; however, reaching and locomotion are impeded. Case studies are presented.

Fraiberg, Selma, and Freedman, David A.
1964. Studies in the ego development of the congenitally blind child. The Psychoanalytic Study of the Child. New York: International Universities Press, 113-169.

Review the cases of 3 to 13 year old blind children who seem to be in developmental arrest. Authors feel that blindness in these cases caused communication barrier with mothers, hindering ego-formation. Perception was mouth-centered, muscles were not used to release aggression, independent locomotion was delayed, and object concept had not been acquired. Case studies given.

Guthrie, George M., Butler, Alfred, and Gorlow, Leon.
1963. Personality differences between institutionalized and non-institutionalized retardates. Am. Journ. of Ment. Def. 67(Jan.): 543-548.

183 institutionalized and non-institutionalized female retardates matched to age and socio-economic background were given various personality tests orally. Results showed institutionalized S's to have consistently negative self-attitudes, compared to non-institutionalized S's.

Hayes, Gene A.
1969. The integration of the mentally retarded and non-retarded in a day camping program: a demonstration project. Ment. Retard. 7(Oct.): 14-16.

Institutionalized MR children and non-retarded children (9-14 years old) were observed during a 2-week day camp. Cooperation, interaction, and parallel play occurred more often among non-retarded S's; self-initiated action and aggression occurred more often in the institutionalized S's; non-activity occurred most often in a group of MR students from a community special education class.

Holden, Raymond H.
1962. Changes in body image of physically handicapped children due to summer camp experience. In E.P. Trapp and P. Himelstein, eds., Readings on the Exceptional Child: Research and Theory. New York: Appleton-Century-Crofts, 542-550.

6 to 12 year olds were studied in 4 groups: (1) physically handicapped attending 2-week day camp, (2) physically handicapped attending 2-week residential camp, (3) nonhandicapped controls in a 2-week period of school, and (4) day camp S's 2 weeks prior to camp. Human figure drawings were obtained before and after 2-week periods. Improved body image was noted only among the physically handicapped S's who attended day or residential camps.

Hutt, Corinne, Hutt, S.J., and Ounsted, Christopher.
1963. A method for the study of children's behavior. Devel. Med. and Ch. Neurol. 5(June): 233-245.

Describes a method for observing and objectively describing children's behavior. An example of application of the method notes the behavior of brain-damaged and normal children in 4 different environments. Attention span and visual fixation of the 2 groups differed sharply.

Knight, John J.
1972. Mannerisms in the congenitally blind child. New Outlook for Blind 66(Nov.): 297-302.

The blind infant begins to use mannerisms to help him cope with anxiety and tension caused by frustration or fear, lack of stimulation, and lack of physical activity. Author feels that blind children must be aided in developing "instrumental behaviors", such as crawling and reaching, to decrease the need for mannerisms.

Levin, Herbert D., and Levin, Gail M.
1972. Instrumental music: a great ally in promoting self image. Music Educ. Journ. 58(Apr.): 31-34.

Music program for trainable MR children in Philadelphia is discussed as a contributor to emotional growth and development of a positive self concept. The components of the program are described.

Lowry, Thomas, ed.
1974. Camping therapy: its uses in psychiatry and rehabilitation, Springfield, Ill.: Charles C. Thomas.

A collection of articles on the therapeutic values and psychological risks of camping.

Lynch, Denis J., and Arndt, Charles.
1973. Developmental changes in response to frustration among physically handicapped children. Journ. of Pers. Assess. 37(Apr.): 130-135.

Handicapped children from schools and classes for the handicapped in a public school system and non-handicapped controls were given Rosenzweig Picture Frustration Study. Found that handicapped S's gave more self-balming responses than controls, and this increased with age. 6 year old handicapped S's gave many denial responses, attributed to coping with frustration.

Martmer, Edgar B., ed.
1959. The child with a handicap. Springfield, Ill.: Charles C. Thomas.

Provides a selection of material written about the handicapped child and those involved in his care and well-being. Enlightens the reader to the view-point of professionals in the field of handicapped child care. Concludes with a directory of camps and schools for handicapped.

Mearig, Judith S.
1973. Some dynamics of personality development in boys suffering from muscular dystrophy. Rehab. Lit. 34(Aug.): 226-230, 243.

Study of 3 brothers with Duchenne muscular dystrophy. Describes their reactions to limited activity, school, and interactions with other children; the parents' problems are discussed as well. Author indicates that these boys need to remain out of a wheelchair as long as possible to prevent prematurely limiting physical and psychological life space; they need to remain in school as long as possible to enhance cognitive, social, and emotional development.

Rappaport, Sheldon A.
1961. Behavior disorder and ego development in a brain-injured child. Psychoanalytic Study of the Child 16: 423-450.

Reports a 9-year study of a cerebral palsied child. Family background, reasons for behavior disorder, and treatment through psychotherapy and family counseling are explored.

Ringness, Thomas A.
1961. Self concept of children of low, average, and high intelligence. Am. Journ. of Ment. Def. 65(Jan.): 453-461.

The self concepts of children with IQ's of 40-over 120 were assessed. Retarded S's tended to overestimate success; bright S's rated themselves the highest, followed by retarded and average children. Retarded S's in general had the least realistic self-concepts.

Robb, Gary.
1971. A correlation between socialization and self-concept in a summer camp program. Thera. Recr. Journ. 5(First Quarter): 25-29.

7 to 16 year old emotionally disturbed children were given a variety of tests to measure socialization and self-concept, before, in the middle of, and after a summer camp session. Sig. improvements in socialization occurred as camp progressed, with greatest gains in the latter part of the session. Results also indicate sig. improvements in self-concept.

Schlesinger, Hilde S., and Meadow, Kathryn.
1972. Development of maturity in deaf children. Except. Childr. 38(Feb.): 461-467.

3 groups of deaf 6-18 year olds were studied: (1) in a residential school with hearing parents, (2) in a residencial school with deaf parents, (3) in a day center with hearing parents. Teachers rated S's on a behavior scale. Immaturity was not found to be a consequence of deafness.

Sternlicht, Manny, and Deutsch, Martin R.
1972. Personality development and social behavior in the mentally retarded. Lexington, Mass.: D.C. Heath and Co.

Gives an introduction to personality development and the meaning of mental retardation; environmental influences on personality; self concept and personality traits in MR child; deviant behavior, social problems, and adjustment of the retardate; behavior adjustment in the classroom.

Tait, Perla.
1972. The effect of circumstantial rejection on infant behavior. New Outlook for Blind 66(May): 139-151.

The blind child must explore to master his environment, and the relationship with his mother will influence his willingness to explore. Author discusses reasons mother may reject child, and the consequences. Suggests the need for more research on mothering a blind child to give mothers help in coping with the many problems encountered.

Tait, Perla.
1972. Behavior of young blind children in a controlled play session. Percept. and Mot. Skills 34 (June): 963-969.

Blind 4-9 year old boys and girls and sighted controls matched to age and sex were observed engaging in play. 3 types of play were identified - dramatic, manipulative, and other. Blind S's engaged in manipulative play more frequently than sighted. Neither degree of blindness nor place of residence affected blind S's play behavior.

Tisza, Veronica B., Irwin, Eleanor, and Scheide, Elizabeth.
1973. Children with oral-facial clefts: a study of the psychological development of handicapped children. Journ. of Am. Acad. of Ch. Psychiat. 12(Apr.): 292-313.

Case studies of 3 8-year old boys with cleft lips and cleft palates are presented. Studies are based on psychiatric interviews with child and parents and psychological testing. Characteristics which were found to be shared are discussed in detail. Relationship with parents and hospitalization have a great effect on the child.

Wallace, Helen M.
1966. Day care for handicapped children. Young Childr. 21(Jan.): 151-161.

Discusses observations made in 12 day care centers for handicapped children in California. Found many deficiencies, but the children seemed to derive benefit from being with other children and from being away from parents, despite low staff and facility quality. Makes suggestions for improvement of centers.

Weininger, Otto, Rotenberg, C., and Henry, A.
1972. Body image of handicapped children. Journ. of Pers. Assess. 36(June): 248-253.

11 to 17 year old handicapped children in institutions and living at home and nonhandicapped controls were given a tray of materials and told to make a person with it. No sig. differences were found between handicapped and controls living at home, but institutionalized S's represented themselves smaller and omitted limbs in over half the cases.

Wirls, Charles J., and Plotkin, Rosalie R.
1971. A comparison of children with cleft palate and their siblings on projective test personality factors. Cleft Palate Journ. 8(Oct.): 399-408.

7 to 14 year olds with cleft palate or cleft lip and palate were given a projective test and results compared to those of normal siblings. Differences were not sig., which authors attribute to lack of test sensitivity to personality differences of cleft palate children, similar behavior of parents toward all children in family, and too wide an age range used in the study.

Wysocki, Boleslaw A., and Whitney, Eleanor.
1965. Body image of crippled children as seen in draw-a-person test behavior. Percept. and Mot. Skills 21: 499-504.

Handicapped and non-disabled 6-11 year olds were given a draw-a-person test. Handicapped S's revealed more anxiety through their drawings and showed more aggressive responses. The area of their disability was indicated in some way.

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Intellectual/Cognitive/Language Development

Baer, Lorraine, and Stanley, Phyllis.
1969. A camping program for the trainable retarded. Educ. and Training of the Ment. Retard. 4 (April): 81-84.

Fifteen TMR children participated in a four-day camping project. Marked advancement was noted in the areas of language development, communication, and speech, demonstrating that camping for the TMR can enhance growth and development. Authors recommend that camping be made a part of school curricula.

Bailit, Howard L., and Whelan, Mary Anne.
1967. Some factors related to size and intelligence in an institutionalized mentally retarded population: an anthropometric study. Journ. of Pediat. 71(Dec.): 897-909.

Anthropometric measurements (height, weight, head size, etc.), IQ, and other data were determined for mentally retarded S's. Found that S's were retarded in all anthropometric measures compared to S's who were heavier at birth; also, the latter S's were more intelligent and larger in size.

Barsch, R.H., and Ruddell, B.
1962. A study of reading development among seventy-seven children with cerebral palsy. Cerebral Palsy Rev. 23: 3-10.

CP children (of a variety of classifications) were given tests to evaluate reading development. 69% were retarded readers; the athetoid group had the highest percent of retarded readers and the hemiplegic group had the lowest percent.

Black, F. William.
1974. Patterns of cognitive impairment in children with suspected and documented neurological dysfunction. Percept. and Mot. Skills 39(Aug.): 115-120.

Pediatric patients with real or suspected neurological disorder were matched to outpatients with no known disorder. All were given cognitive tests. Outpatients performed within normal ranges; S's with known disorder did the poorest, and S's with suspected disorder performed in between. Authors suggest that WISC subtests may be used in diagnosis of neurological disorder in children.

Bowley, Agatha H.
1967. A follow-up study of 64 children with cerebral palsy. Devel. Med. and Ch. Neurol. 9(Apr.): 172-182.

Educable children who had attended a preschool for CP children were tested for IQ and social maturity at age 7. S's with higher intelligence were making the best academic progress; social maturity was "appropriate" for about half the S's, although almost all were very sensitive about or resentful of their disability. Assessment of parents showed that most parents were affectionate and interested.

Byrne, Margaret C.
1962. Speech and language development of athetoid and spastic children. In E.P. Trapp and P. Himelstein, eds., Readings on the Exceptional Child: Research and Theory. New York: Appleton-Century-Crofts, 521-533.

Educable spastic and athetoid CP 2-7 year old children were given language tests. Found that the children were seriously delayed in language and speech development, but they were developing language skills in the same sequence as normal children. Spastics got somewhat higher scores.

Cartwright, G. Phillip.
1968. Written language abilities of educable mentally retarded and normal children. Am. Journ. of Ment. Def. 72(Jan.): 499-505.

12 to 15 year old EMR S's and 8-15 year old normal S's were compared in their use of language. Normal S's wrote more grammatically correct compositions and had fewer spelling errors; EMR S's were more redundant in the use of words than children of the same mental or chronological age.

Das, J.P.
1972. Patterns of cognitive ability in nonretarded and retarded children. Am. Journ. of Ment. Def. 77(July): 6-12.

Public school students with IQ's under 100 were selected from a population of 1300; nonretarded and retarded S's were matched to mental age and socio-economic status. Cognitive tasks were given. Nonretarded were found superior on all tasks to the retarded; both groups solved problems in different ways.

d'Avignon, M., Hellgren, K., Juhlin, I.-M., and Atterback, B.
1967. Diagnostic and habilitation problems of thalidomide-traumatized children with multiple handicaps. Devel. Med. and Ch. Neurol. 9(Dec.): 707-712.

Discusses the educational impact of physical and mental handicaps present in thalidomide children. Hearing loss and limb malformations impair ability to do schoolwork and play, thus necessitating serious consideration of their placement in special classes.

Evans, Joyce Stewart, and Bangs, Tina.
1972. Effects of preschool language training on later academic achievement of children with language and learning disabilities: a descriptive analysis. Journ. of Learn. Dis. 5(Dec.): 585-592.

3 to 6 year olds evaluated in a preschool program were predicted to have later difficulties in school due to language and learning disabilities. The preschool program attempted to provide training which would help children attain academic potential. 3 years later 70% of S's who completed the program were working at grade level; only 25% of those who did not complete the program and 18% of learning and language disabled children who had no preschool training were achieving at grade level.

Gottesman, Milton.
1973. Conservation development in blind children. Ch. Devel. 44(Dec.): 824-827

Sighted and congenitally blind 4 to 11 year olds were given tests of conservation of mass, weight, and volume. Found that the rate of conservation development for blind S's was slower than sighted at 4-7 years but was the same by 8-11 years. Concludes that vision is not necessary for development of conservation.

Gottsleben, Robert H., Wright, Teris S., Foster, Carol, Giddan, Jane J., and Stark, Joel.
1968. Developmental language programs for aphasic children. Academ. Thera. Q. 3(Summer): 278-282.

Describes the range of language problems which the aphasic child may have. Subject matter and teaching technique are emphasized as important factors to consider when teaching the aphasic child, in addition to considering the child's ability to cope with visual and auditory stimuli. Various programming techniques are discussed.

Ives, L.A.
1967. Deafness and the development of intelligence. Brit. Journ. of Disord. Communic. 2(Oct.): 96-111.

Defines and classifies forms of deafness. Reviews the literature on sensory deprivation, IQ testing, experiments with the hearing and the deaf, Piaget's theory of intelligence, and use of language by the deaf. Author discusses 2 programs that apply Piaget's theory of development of intelligence to the deaf.

Klapper, Zelda S., and Birch, Herbert G.
1967. A fourteen-year follow-up study of cerebral palsy; intellectual change and stability. Am. Journ. of Orthopsychiat. 37(Apr.): 540-547.

Young adults with cerebral palsy who had been studied 14 years previously were given the WAIS. Paraplegic and monoplegic S's showed a sig. mean increase in IQ score; hemiplegic and athetoid S's showed no increase. Adults with average or above average childhood IQ's showed no decline in adulthood.

Koh, Tong-He.
1972. Cognitive and social development of postrubella deaf children of preschool ages: a follow-up study. In Proceedings of 80th annual convention of the American Psychological Association, vol. 7. Washington, D.C.: American Psychological Association, 705-706.

Reports on a 3-year follow-up study of 17 postrubella children who attended a preschool nursery program for the deaf where they were taught language and speech skills and where their mothers learned communication skills. All were evaluated with battery of tests once per year. Found that S's were equal to or superior to hearing children in perceptual, cognitive, intellectual, and social development. At later ages development began to decelerate.

Kopp, Claire B., and Shaperman, Julie.
1973. Cognitive development in the absence of object manipulation during infancy. Devel. Psychol. 9(Nov.): 430.

Study of a now-3 year old child born without limbs. Up to 2½ years his only interaction with the environment was looking, listening, or moving objects with his head or trunk. Intellectual functioning was found near-normal for his age, indicating that learning can occur without object manipulation.

Marinossen, G.L.
1974. Performance profiles of matched normal, educationally subnormal and severely subnormal children on the revised ITPA. Journ. of Ch. Psychol. and Psychiat. 15(April): 139-148.

Boys and girls with mean IQ's of 95, 61, and 41 with mental ages of approximately 5 years were given Illinois Test of Psycholinguistic Abilities. Found that both MR groups performed poorly. Individual differences within the educable and severely retarded groups were so great that the author emphasizes the necessity of individualized remedial programs.

Martin, Sister Margaret Mary, and Ovans, Phyllis M.
1972. Learning games are pathways to cognizance for young handicapped children in therapeutic recreation. Thera. Recr. Journ. 6(Fourth Quarter): 153-157.

Learning disabled children in a 5-week program utilizing games as learning media were given pre- and post-tests to determine if gains in motor, language, and social development had occurred. Found sig. gains in all areas. Suggestions for further research given.

Palkes, Helen A., and Stewart, Mark.
1972. Intellectual ability and performance of hyperactive children. Am. Journ. of Orthopsychiat. 42(Jan.): 35-39.

Hyperactive children in a hospital psychiatry clinic and their matched controls were given a battery of tests. Hyperactive S's were found to have lower intelligence than controls, but the study throws doubt on the conception that hyperactive children have perceptual-motor handicaps.

Raviv, Shulamit, Sharan, Shlomo, and Strauss, Sidney.
1973. Intellectual development of deaf children in different educational environments. Journ. of Communic. Disord. 6(Mar.): 29-36.

Deaf children in a special school for the deaf, deaf children from an integrated school, and hearing children from an integrated school, all aged 6½-9 years, were tested for intellectual development. No difference was found between hearing and integrated deaf at all ages; differences in intellectual development were found between integrated and segregated deaf at various age levels. This research supports previous findings that intellectual development is parallel to, not dependent upon, language development.

Reiss, Philip.
1967. Implications of Piaget's developmental psychology for mental retardation. Am. Journ. of Ment. Def. 72: 361-369.

Discusses Piaget's complex conception of intelligence, his developmental-stage theory of development, and categories of individual differences which are found in his writings. Piaget felt that mental retardation was due to arrested mental functioning at a certain level of normal development, causing the retardate to function at a different rate than the normal child at the same developmental level. Author emphasizes that Piagetian concepts should not be applied to special education unless certain they offer it something better.

Rosenstein, Joseph.
1962. Cognitive abilities of deaf children. In E.P. Trapp and P. Himelstein, eds., Readings on the Exceptional Child: Research and Theory. New York: Appleton-Century-Crofts, 387-398.

Deaf and hearing 8 and 10 year olds from 3 different types of schools were given non-verbal visually presented tasks of perceptual and cognitive abilities. Found no age differences in performance and no differences among the deaf from public, private, or parochial schools. No sig. difference was found between deaf and hearing S's in cognitive abilities.

Ross, Dorothea M., and Ross, Sheila A.
1972. The efficacy of listening training for educable mentally retarded children. Am. Journ. of Ment. Def. 77(Sept.): 137-142.

An experimental group of EMR children were given a 10-week listening training program to enhance acquisition of listening skills. Experimental group showed definite improvement compared to controls from a traditional classroom, but experimental group was still inferior to non-retarded children of same chronological age.

Smith, Robert M., and McWilliams, Betty Jane.
1968. Psycholinguistic abilities of children with clefts. Cleft Palate Journ. 5(July): 238-249.

3 to 11 year olds with cleft palate, cleft lip, or both were given ITPA, and the results were compared to standard scores. Found differences in verbal expression and visual and auditory memory. As age increased, so did language weaknesses.

Spreen, Otfried.
1965. Language functions in mental retardation: a review.I. language development, types of retardation, and intelligence level. Am. Journ. of Ment. Def. 69:482-494.

Reviews literature dealing with incidence, causes, and results of language deficit. Covers differential language development in specific forms of retardation. Institutionalization, auditory defects, and handedness are discussed.

Swisher, Linda Peck, and Pinsker, Esther Jill.
1971. The language characteristics of hyperverbal, hydrocephalic children. Devel. Med. and Ch. Neurol. 13(Dec.): 746-755.

2½ to 9 year old children with spina bifida and hydrocephalus assessed as hyperverbal were interviewed and given ITPA. Nonhydrocephalic children of the same ages with histories of hospitalization were also tested. Hydrocephalic S's were found hyperverbal and superficial and inappropriate in their language use.

Tait, Perla.
1972. Play and the intellectual development of blind children. New Outlook for Blind 66(Dec.): 361-369.

Reviews literature dealing with this subject. Discusses blind infants seemingly low desire to play, how play aids in intellectual and emotional development, importance of the mother, development of language in play, and the response to various play materials. Author emphasizes the teacher's role in helping the blind learn to play.

Tang, Fay C.F., and Chagnon, Maurice.
1967. Body build and intelligence in Down's syndrome. Am. Journ. of Ment. Def. 72(Nov.): 381-383.

Weight/height ratios of 2 groups (heavier and shorter; taller and thinner) with Down's syndrome were compared with mean IQ's of both groups. With these two extremely different groups, the heavier and shorter Down's S's were found to have higher IQ's.

Vergason, Glenn A.
1968. Facilitation of memory in the retardate. Except. Childr. 34(Apr.): 589-594.

Reviews research on learning and retention to determine practices which could be used by teachers of MR to help students improve their memories. Concludes that one of the greatest problems MRs have is short-term mental retention of material. Concise directions and repetition of material may help. Long-term memory can be enhanced by overlearning of meaningful material.

Walsh, Sara R.
1974. I'm me. Teaching Except. Childr. 6(no. 2): 78-83.

A teacher of multihandicapped children at the Georgia Center for the Multihandicapped in Atlanta discusses her experiences and suggests language development activities.

## Program Planning, Administration, and Evaluation in the Natural Environment

### Programs - General Programs and Activities

Albert, Russell.
1970. A concentrated program of outdoor education for educable and trainable retarded. Thera. Recr. Journ. 4(Second Quarter): 26-32.

A 7 week summer program of outdoor education for 9 to 17 year old trainable and educable MR children was conducted by a team of special educators and activity aides. The program was considered to be highly successful learning experience for the group. Suggestions are offered for further study.

Alkema, Chester Jay.
1967. Implications of art for the handicapped child. Except. Childr. 33(Feb.): 433-434.

How art experiences can enhance the physical and social/emotional development of the child is presented. Adaptations which permit orthopedically handicapped children to participate are described.

Arronson, Warren.
1972. Recreation and physical education in the special education environment. Thera. Recr. Journ. 6(First Quarter): 11-13, 35-36.

Innovations in program design, development, and dissemination of results are discussed in terms of 5 federally funded projects. The projects, all child-centered, are a summer camp program in Colorado specializing in learning disabilities, a self-awareness program at the Norman Beatty Hospital School in Indiana, the Austin State School for Retarded Children, and other programs in Houston, Tex., and Boston, Mass.

Barnett, Marian Weller.
Handicapped girls and girl scouting: a guide for leaders. New York: Girl Scouts of America.

The merits of integrating handicapped girls with existing troops vs. the merits of forming their own troops are discussed. Presents principles of adapting activities, especially camping, to meet needs of specific handicapping conditions.

Baumgartner, Bernice B., and Shultz, Joyce B.
1969. Reaching the mentally retarded through art. Johnstown, Pa.: Mayfex Associates.

An art program is described: drawing, painting, block play, cutting and pasting, printing, using cardboard, fabric and wood. The value of a well-planned art program includes enhancement of cognitive, sensori-motor, and personality development.

Boy Scouts of America.
1971. These our brothers: a guide to scouting with the handicapped. New Brunswick, N.J.: Boy Scouts of America.

Provides guidelines for including the handicapped in a scouting program.

Brannan, Steve.
1969. Outdoor education. . . stimulus for the mentally retarded. Oregon Education 43(Dec.): 8-12.

A special summer camping program for 40 EMR's was conducted by teachers of EMR's. The camping experience made teaching and learning more meaningful and provided the children with greater motivation to learn. The education-recreation concept is recommended for training special and regular educators.

Buell, Charles.
1956. Outdoor education in a school for the blind. Except. Childr. 23(Apr.): 266.

An educator involved with the blind discusses the concept of outdoor education for the blind and describes the first program noted in the U.S. (Salem, Oregon.)

Canner, Norma.
1968. . . . and a time to dance. Boston, Mass.: Beacon Press.

Photos and text illustrate the physical and emotional growth of young mentally retarded children in a dance class. Suggests methods of instruction for nonparticipants; also presents activities for circular formations, musical instruments, locomotion, and learning of body parts. Includes a section on teacher training.

Carlson, Bernice Wells, and Ginglend, David R.
1961. Play activities for the retarded child: How to help him grow and learn through music, games, handicraft, and other play activities. Nashville, Tenn.: Abingdon Press.

Included are detailed activities for MR children with mental ages under 6 years. Activities such as crafts, games, informal play, music, and speaking are described. A reading list for further information is included.

Cassidy, M. Frances, and others.
1965. Pilot demonstration study on outdoor education for mentally retarded youth. Greeley, Col.: Colorado State College, Division of Education. (mimeographed)

The purpose of this project was to demonstrate the effectiveness of utilizing the out-of-doors in teaching the mentally retarded. Activities and goals, along with an evaluation, is included.

Duggar, Margaret P.
1968. What can dance be to someone who cannot see? Journ. of Health, Phys. Educ., and Recr. 39 (May): 28-30.

Presents methods for helping the blind child to develop spatial awareness, body awareness, and rhythm perception through dance. Discusses the use of verbalization and images in dance instruction for the blind.

Fitzgerald, Gerald B.
1952. Nature recreation for the crippled child. Crippled Child 2(June): 159.

Nature recreation has so much to offer to a well-balanced recreation program, and especially for the handicapped child. Nature recreation can be used with all handicapped children no matter how severe their disability.

Fitzpatrick, Thomas K.
1962. Selected rehabilitation facilities in the United States: An architect's analysis. Washington, D.C.: U.S. Dept. of Health, Education and Welfare, Social Rehabilitation Service.

Based on a research study done to seek out and identify rehabilitation facilities in the U.S. where new and progressive concepts in programming for rehabilitation are on-going. Would also serve as a reference document to identify the most advanced ideas in planning and designing of rehabilitation facilities.

Franklin, C.C., and Freeburg, William H.
1967. Diversified games and activities of low organization for mentally retarded children. Carbondale, Ill.: Southern Illinois University, Information Center - Recreation for Handicapped.

A collection of recreation activities developed for the Institute program series for leadership training of day camp directors for MR children. Discussed are basic principles of teaching physical activities to young children.

Hawkins, Donald E., and Littman, Karen Gross.
Camping and environmental learning for handicapped persons. Washington, D.C.: George Washington University (Unpublished manuscript).

Discusses benefits to be derived from camping and environmental learning for handicapped individuals and methods for increasing opportunities in this area.

Hirst, Cynthia C., and Michaelis, Elaine.
1972. Developmental activities for children in special education. Springfield, Ill.: Charles C. Thomas.

Presents a variety of physical activities which will help the learning disabled child develop, in accordance with his own level and potential, necessary physical skills. Activities include movement exploration, motor-perceptual tasks, exercise, tumbling, apparatus activities, games, and sports. These activities are presented progressively in a developmental curriculum.

Matteson, Carol A.
1972. Finding the self in space. Music Educ. Journ. 58(Apr.): 63-65.

Feels that movement and spatial-awareness activities in music class can help the multiply handicapped child's physical and mental development. Gives practical suggestions for helping these children to study movement and music.

Rehabilitation Record.
1972. The creation in recreation. Rehab. Rec. 13(May/June): 40.

Discusses the following: recreation and rehabilitation, dance and the deaf, recreation for the lonely, anxious, and bored, drama and the blind, wheelchair activities, camping for the retarded, blind bowling, homebound recreation, and travel for the disabled.

Samoore, Rhoda.
1970. A rhythm program for hearing impaired children. Illinois Advance (Jan.): 1-3, 15-20.

The rhythm program described includes physical and vocal exercises, singing, dancing, speaking techniques, and instruction about musical instruments. The program's purpose is to enhance speech development of the deaf.

Shea, T., Phillips, T.L., and Campbell, A.
1972. Outdoor living and learning complement each other. Teaching Except. Childr. 4(3): 108-118.

An outdoor laboratory experience designed to enrich the educational experiences of children with special needs is described. The Little Grassy Outdoor Laboratory located near the Southern Illinois Univ. Carbondale campus includes a lake, fishery, conservation camps, animal farm, and experimental farms and forests. The laboratory is available for use by groups from anywhere in the country with varying fee schedules.

Programs - Community-Based Programs

American Association for Health, Physical Education, and Recreation.
1972. Anchor - answering the needs of children with handicaps through organized recreation. Journ. of Health, Phys. Educ., and Recr. 43(Jan.): 85-86.

Physically and emotionally disturbed children participate according to age in a 6 week summer recreation program in Hempstead, N.Y. The goal of the camp is a social integration of the children into their peer groups. They learn to help themselves by helping others. Effort is made to create a happy atmosphere, trying to bring the children out of their shells.

Brodkin, Arthur.
1968. Programs for the mentally retarded. In Group work and leisure time programs for mentally retarded children and adolescents. Washington D.C.: Social and Rehabilitation Service, 18-24.

Jewish community centers and YM and YWHA's provide, at the centers and in camp settings, programs and activities for MR children and adolescents. In the majority of cases programs for the MR are integrated with other programs for children of their age. Experience indicates that center programs are the most beneficial to EMR and TMR individuals and that, except in the case of high level EMR's, the needs of MR individuals are best served by coeducational peer groups.

Crippled Child.
1939. Community service and the handicapped girl scout. Crippled Ch. 17(June): 16, 18.

The benefits of scouting for the crippled child are discussed, particularly in the areas of social, community, and personal adjustment. Case studies are cited.

Herbert, E.L.
1958. Hearing impaired children in community recreation and camping programs. Journ. of Speech and Hearing 23(Nov.): 610-612.

A summary of a report made by the Baltimore Hearing Society on a 5-year demonstration project designed to integrate deaf, hard-of-hearing, and aphasic children with hearing youngsters in year-round recreation and social programs. Findings after 3 years indicate that handicapped children benefit from integrated recreation experiences and that public recreation agencies should employ specialists to facilitate the integration.

Mitchell, Helen J.
1971. A community recreation program for the mentally retarded. Thera. Recr. Journ. 5(First Q.): 3-10.

Paper presented to the 1970 NTRS annual institute in Philadelphia, detailing municipal recreation program for the MR in Washington, D.C. Discusses camping program and offers results of a 6 month evaluation.

Ryan, William F.
1964. Observations of a community recreation director on recreation for the retarded. Recreation in Treatment Centers 3: 16-17.

Describes the volunteer, community, and financial support which was obtained for the running of a year-round recreation program for disabled children in Quincy, Mass. The day camp program for MR children is specifically discussed.

Williams, Chester T., and Coltoff, Kay.
1965. Sharing responsibility for an integrated day camp. New Outlook for the Blind 59(3): 100-103.

An example of interagency cooperation and utilization of community resources in providing services for multiply handicapped blind children. Described are the cooperative planning involved, administration, activities, staff, and the positive values of the program.

Wood, Tom.
1969. Cooperation is the key word in Milwaukee. ICRH Newsletter 4(2): 3.

Milwaukee has led the way in providing parks and free public recreation facilities for the disabled. An all-purpose center in Haller Park (turned over to the local society for crippled children) provides programs for about 260 persons every summer. Day camp experiences, a wide variety of activities, and new programming methods are designed to overcome the disabled child's (and the parent's) fear or reluctance to participate.

Programs - Park Programs

Boyd, Mary M.
1970. Parks for all seasons - and for all people. Parks and Recr. 5(May): 22-23.

The National Park Service has attempted to bring the parks to the urban poor through a number of projects in Washington, D.C. The Anacostia Neighborhood Museum specializes in exhibits relating to black history. In addition, a camp for inner-city children, recreation programs in an emergency home for displaced children, and seminars in black history at the D.C. Jail are among the offerings of the Park Service.

Brett, James J.
1971. Pathways for the blind. Conservationist (June-July): 13-16.

Gives a brief description of Pennsy Oerwood braille trail which includes questions to stimulate hikers thoughts about man's relationship to nature.

Cable, Louis A.
1972. Programs for handicapped: The blind "see" the world of nature on the braille trail. Journ. of Health, Phys. Educ., and Recr. (Jan.)

The first of a 3-part article on programs for the handicapped, this short discussion centers on the braille trail of Bucks Co. Dept. of Parks and Recreation. The methods of the trail program are briefly outlined.

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Rehabilitation Record.
1968. A feeling for nature. Rehab. Rec. 9(Jan./Feb.): 20-21.

The article describes the Roaring Fork Braille Trail in Colorado's White River National Forest, a prototype of outdoor areas designed for both blind and sighted persons.

Rehabilitation Record.
1969. Handicapped among flora and fauna. Rehab. Rec. 10: 20-21.

A project administered by the Dept. of Agriculture which brings disabled people to the George Washington National Forest. They can hike on trails geared especially to their needs.

Spinelli, Antonio, and Earley, James.
1972. Dual nature trails use both braille and printed markers for use of visually handicapped campers. Camping Mag. 44(Mar.): 19.

Discussion on the use and program for the Hale Camping Reservation's nature trail which is used by the visually disabled. Its construction is also discussed.

Stone, Edward H.
1971. There's a wheelchair in the woods. Parks and Recr. 6(Dec.): 18-19.

Through the use of technology, the forestry department is making pathways so that the physically handicapped, deaf, and blind can also enjoy nature.

United States Bureau of Outdoor Recreation.
1967. Outdoor recreation for the handicapped. Washington, D.C.: U.S. Bureau of Outdoor Education.

Methods for adapting outdoor recreation services for the disabled are suggested. The various categories of disability and the limitations they impose are discussed. Modifications are recommended for playgrounds, swimming and camping facilities, fishing, and boating. Sources of support and information on recreation programming are listed.

Programs - Camp Programs

Akron Public Schools.
1972. Academic day camp. Akron, Ohio: Akron Public Schools, 15 pp.

An academic day camp was instituted with funds from an ESEA Title I grant for the purpose of improving academic skills and enhancing self-concept. The summer day camp was divided into 2 programs: in the morning, activities were devoted to English and math; in the afternoon, swimming, hiking, arts and crafts, and field trips to local nature centers, museums, and other cultural centers constituted the program.

Aldrich, Gordon J., and MacDonald, D.S.
1952. An experimental camp for emotionally disturbed boys. Journ. of Child Psychiat. 2(Sect. 3): 245-251.

A camp for 8 to 15 year old emotionally disturbed boys was co-sponsored by the Big Brother movement of Toronto and the Lions Club of Toronto. The camp program consisted of typical camp activities with consultations with a psychologist. It was found that many boys grew in emotional health because of their camp experiences.

American Association for Health, Physical Education, and Recreation.
1971. Camp Hidden Valley. Journ. of Health, Phys. Educ., and Recr. 42(May): 73-74.

Camp Hidden Valley is a Fresh Air Fund camp for 8 to 12 year old boys and girls, where equal numbers of handicapped and non-handicapped camp together for 3-week sessions. It is a free program where children are accepted on basis of need. There are no obvious program considerations for the handicapped and only a few in the architectural design (such as ramps.)

Amsden, Robert L.
1936. The summer camp as a behavior clinic. Ment. Hygiene 20(Apr.): 262-268.

Camp Onawama in Michigan utilizes guidance techniques in the camp program. The overall effect has been an improvement in behavior of the socially maladjusted campers.

Baker, Bruce L.
1973. Camp Freedom: Behavior modification for retarded children in a therapeutic camp setting. Am. Journ. of Orthopsychiat. 43(Apr.): 418-427.

The effects of an experimental summer camping program in which behavior modification techniques were used on selected behavior and learning variables were studied among 25 retarded children. A control group of 15 MR children who did not attend camp was also studied. Results indicate that progress in the predetermined target areas was greater for the campers than the non-campers.

Bateman, Barbara.
1968. A pilot study of mentally retarded children attending summer day camp. MR/Mental Retardation 6(Feb.): 39-44.

Samples from 4 summer day camps for MR children were given a battery of tests before and after an 8-week camping experience. Changes in attitudes of counselors, and parental appraisal of the experience were also obtained. Results suggest that many MR children can benefit from summer day camp, and these benefits are related to type of program offered.

Bean, Margaret A.
1972. Camp Lighthouse. Am. Journ. of Nsg. 72(May): 950-953.

Under the auspices of the N.Y. Association for the Blind, a voluntary organization commonly called "The Lighthouse," Camp Lighthouse provides 2 and 3 week intensive camping experiences for groups of teenagers and adults who are legally blind. Along with a recreation program, activities are designed to help campers develop skills for living in the sighted world and for helping themselves.

Bent, S., and Miller, G.
1969. Integrating mentally retarded campers into a camping program and facility specifically designed to meet the needs of the physically handicapped. Easter Seal Society for Crippled Children and Adults of Baltimore and Wilmington, Delaware.

Summaries of the camping sessions, questionnaires filled out by staff, and recordings of interviews with staff and campers are presented for the 2 years that the study was conducted to assess the feasibility of integrating retarded children into a residential facility designed for the physically handicapped. It was found that retardation was accepted by the crippled camper as another disability, and, with the exception of the emotionally involved retardate, it was possible to integrate the 2 groups at almost all levels of activity.

Berg, Robert B.
1958. Psychology in children's camping. New York: Vantage Press.

A psychiatric social worker describes the psychological approach to meeting the needs of children in a camp setting. The developmental stages of growth are detailed in terms of their implications for camp programming.

Bleeks, Virginia.
1963. Some of the important factors which were considered in the establishment of camping programs for exceptional children. Unpublished Master's thesis: Bowling Green State University.

An investigation of the program modifications needed in camps serving the handicapped showed that when similarly handicapped youngsters were together or when a handicap was not crippling, a nearly normal program could be maintained. As the degree of crippling and the variety of handicaps in the camp increased, the need for modifications increased.

Blood, Robert O., and Livant, William P.
1957. The use of space within the cabin group. Journ. of Social Issues 13(1): 47-53.

In treatment of emotionally disturbed, "grouping" into cabins sets the framework within which interaction occurs. Article explores one way in which cabin group operates, namely in its use of space. Hypothesizes that members of a group will arrange themselves spatially in ways that reflect and implement their social relationships. Calls for further study.

Burnes, A.J., and Hassol, Leonard.
1966. A pilot study in evaluating camping experiences for the mentally retarded. Ment. Retardation 4(Aug.): 15-17.

The Cain-Levine social competency scale was used to evaluate the effects of a "companion model" recreation experience for MR children. This model views counselors as peers of campers. The campers ranged in age from 8-15 years and were classified as TMR and EMR. Mean age of counselors was 14 years. Results indicated a sig. improvement in observed social competence after the camping experience.

Freedman, Sidney.
1960. School camping: Experiment to help the mentally handicapped. Camping Mag. 32(Mar.): 34-35.

Camping as an educational experience for the mentally retarded is described in terms of benefits derived, as well as problems involved.

Hartshorn, Marion.
1971. Model for a dual programmed summer day camp for mentally retarded children. Unpublished doctoral dissertation: University of Georgia.

The investigator designed, implemented, and evaluated a model program of day camping for MR children. The program, which was formulated from a literature review and expert opinion, devoted equal time to academic and physical activities. The model was judged by a "panel of experts" as being adaptable to any community.

Krieger, William.
1973. Study on self-concept change in campers receives ACA's 1972 research award. Camping Mag. 45 (Apr.): 16-17.

Krieger's doctoral dissertation attempted to establish a basis for camping as a therapeutic tool. In a specially designed 4-week camp program, he found that the campers had sig. positive increase in self-concept and a decrease in poorly adjusted behavior. No age or sex differences were reported. There was no sig. relationship between self-concept and behavior changes.

Rawson, Harve E.
1973. Residential short-term camping for children with behavior problems: A behavior modification approach. Child Welfare 52(Oct.): 511-520.

Residential camping is advocated for behavior-problem children because of the high degree of environmental control potential and its appeal to children, also because its length can be structured to suit the needs of the individual. One such camp is described. The program consists of math taught in swimming, geography and spelling taught in arts and crafts, etc. Behavior modification techniques and activities to improve social skills are used throughout. A recent evaluation showed that sig. improvement had been made among students in self-ratings and attitudes toward school, teachers, and academic activities.

Smith, Bert Kruger.
The worth of a boy. Austin, Tex.: Hogg Foundation for Mental Health.

A residential camp for emotionally disturbed boys is described. The approach is one of creative listening, non-judgemental attitudes, empathetic love, etc. Evening campfires serve as group therapy sessions. The author supports year-round camping as a means to remove a boy from a degrading and defeating environment and to teach self-respect.

Administration - General Considerations

American Camping Association .
1968. Handicapped camper survey. Camping Mag. 40(Apr.): 31.

A survey of 165 non-specialized camps in Virginia was made to determine the extent of integrated camping. It was reported that 2/3 of the camps would accept children with handicaps, but that half of the 2/3 would only accept children with minor handicaps. Reasons given for not accepting handicapped campers were that surroundings would be too dangerous, it would embarrass other children, and the demand on staff and facilities would be excessive.

American Camping Association.
1952. Serving the handicapped camper. Camping Mag. 24(June): 26-27.

4 articles from the Kindred Group Sessions of the 1952 ACA convention are given. They deal with evaluation of handicaps, programs for the handicapped, intake policies and procedures, and administration of camps for the handicapped.

Birebaum, Arnold, and Schwartz, Arthur.
1968. Recreation for the mentally retarded: A community based program. New York: Association for Help of Retarded Children (Nov.).

A federal grant has allowed more than 500 MR persons of all ages in N.Y. City to take part in the varied community recreation programs of the group work recreation and camping department of the Association for Help of Retarded Children. Aims of the 13 participating community centers in this 3-year study are discussed.

Carter, Clyde.
1947. Camping for the city-bound. Crippled Child 14(Apr.): 11-13.

A day camp for handicapped city children is discussed. The author describes 6 basic problems that must be overcome to have a good camp: suitable location, finding the campers, securing the staff, planning the program, making arrangements for transportation, and serving meals.

Children's Bureau.
1968. Group work and leisure time programs for mentally retarded children and adolescents: Report of a conference Dec. 1, 1966. Washington, D.C.: Social and Rehabilitation Service.

In order to enlarge existing programs and establish new ones, agencies need to coordinate their services, improve intra-agency communication, explore new financing arrangements, and train additional leadership. Grouping principles should be carefully explored, and innovative and experimental camp, summer, weekend, and vacation services should be investigated.

Deficience Mentale/Mental Retardation.
1969. Summer programs 1969 across Canada. Deficience Mentale/Ment. Retard. 19(4): 6-9.

Parks and recreation boards are cooperating with associations and agencies in the planning, coordination, and integration of recreation programs. Swimming, day camp programs, day playgrounds, and residence camps are available in Canada. Efforts are being exerted to solve the problem of transportation and to see that more mentally retarded children in rural areas are afforded the opportunity to attend a summer program.

Duhl, Leonard J.
1958. The normal development of the mentally retarded child: planning a federal program. Am. Journ. of Ment. Def. 62(Jan.): 585-591.

Factors which must be considered in planning programs to meet the needs of the MR are discussed. Stresses the necessity of understanding the retarded's and normal child's development. Explores influences on the MR child (parental attitudes, peers and siblings, physical environment). The role of institutions and agencies that provide services for the MR are discussed.

Hallowitz, Emanuel.
1950. Camping for disturbed children. Ment. Hygiene 34(July): 406-422.

Deals with the experiences of a child guidance agency in attempting to help its clients through a camping experience. Covers integration of camp and agency, development of camp philosophy, implementation of philosophy, and basic problems to be considered in planning a camp for disturbed children.

Hardt, L.J., ed.
1968. Easter Seal guide to special camping programs. Chicago, Ill.: National Easter Seal Society for Crippled Children and Adults.

The most complete guide to camping with the handicapped child available today. Discusses the various areas that must be considered before a camp can serve the handicapped and outlines regulations and suggestions for each: philosophy, objectives, administration, site selection, legal matters, insurance, budget, buildings and facilities, admission, staff, health and safety, and programming.

Johnson, Leah D., and others.
1967. A vital stimulus. Washington, D.C.: U.S. Government Printing Office.

Describes forming of the South Carolina youth task force in 1966 by members of a youth group serving as volunteers at a summer camp for MR children. Their purpose was informing, encouraging, and helping other S.C. youth groups to start programs for MR youth in their communities. The organization worked with the governor's interagency council on MR and developed a 1-year state and interstate program.

Keck, S.A., and others.
1970. Day camping for the trainable and severely mentally retarded - guidelines for establishing day camp programs. Springfield, Ill.: Ill. Dept. of Mental Health, Div. of Mental Retardation Services.

Activities program manual for a day camp for retarded children. Sections include administering a day camp, physical activities, arts and crafts, and music activities. Appendices provide forms, lists of materials, and schedules. See also George D. Patrick, Day Camping for Developmentally Disabled and Exceptional Children, which is the revised ed. of this publication.

Lonheim, Dale M.
1971. City camping calls for coordination. Camping Mag. 43(Apr.): 20-21.

How Seattle agencies cooperate in making camping available to all its citizens is discussed in terms of the availability of its facilities (free) to any organized group that wants to teach and practice camping or outdoor education activities. Also discussed are site selection, the specialized camp, senior citizen day camps, and regular day camps.

Orzack, Louis H., Charland, Benoit H., and Halliday, Harry.
1969. Day camping and leisure time, recreation activities for the mentally retarded: Monograph No. 2 on t'e Pursuit of Change series. Bridgeport, Conn.: Parents and Friends of Mentally Retarded Children of Bridgeport.

Problems that must be overcome in developing recreation programs for the disabled include defining their needs, selecting sites, transportation, selecting staff, budgeting, and obtaining parental cooperation. Parents are concerned about adverse terrain, transportation, cost, and the effect on their disabled children.

Shipp, Robert E. Expanding program services. Parks and Recr. 3(Nov.): 43-44.

Author reports how a community set up a camp for physically handicapped children. The organization, program planning, and community cooperation are described.

Sternberg, Robert A.
1968. Organization of camping programs for the mentally retarded. In Selected convention papers of 46th annual international convention, New York, April 14-20, 1968. Washington, D.C.: Council for Exceptional Children, 251-253.

Good safety precautions and accurate selection of campers are essential to the effective functioning of a day camp for exceptional children. Safety precautions should include medical permission, early screening, and the determination of all medications. The camp should have adequate liability insurance. Personnel experienced with exceptional children are most useful.

Van Horn, Omah Jean.
1955. Camping for the crippled child in Indiana and Illinois. Unpublished Master's thesis: Ball State Teachers College.

12 camps in Ill. and Ind. were surveyed to determine the extent to which they were serving handicapped children. Objectives of the camps, populations served, orientation programs, and personnel utilized are described by the study.

Walker, J.D.
1971. Handicapped camping in Alberta - a five-year projection 1970-1975. Canad. Camping 23(2): 22-25.

This projection outlines the methods whereby Alberta's camps can meet the challenge of providing outdoor recreation in a camp setting for disabled children. Discussion of the means by which this challenge can be achieved are covered in 3 areas: identification and placement of campers, staff selection, training, and development, and coordination and administration of a continuing service.

Administration - Staff Development

American Camping Association.
1954. Programs for the handicapped children. Camping Mag. 26(Apr.): 32.

Report on a special interest session at the 1954 national convention. Main emphasis was on need for adequate pre-camp training of counselors for the handicapped.

Eiler, John.
1972. Inmates work with retarded. Hosp. and Commun. Psychiat. 23(Feb.): 7.

Describes the day camp program run by reformatory inmates and high school and college students from the Washington, D.C. area, for severely to mildly retarded children. The Shrivers' Estate in Rockville, Md. was the site used by the group to conduct such activities as swimming, canoeing, and horseback riding. The benefits of such a working relationship are discussed.

Ford, Phyllis M.
1969. Two modern challenges for every camp director. Camping Mag. 41(Sept./Oct.): 18-19.

Discusses integration of the disadvantaged and physically handicapped in a camp program and how important the pre-camp training period is when dealing with these "special" children.

Ford, Phyllis M.
1966. Your camp and the handicapped child. Martinsville: American Camping Association.

This pamphlet was written for directors and counselors in camps that have one or more handicapped children.

Fried, Murray C.
1970. Organization + interest + involvement + innovation + facilities: Ingredients for a successful camp. Challenge 6(Sept./Oct.): 6-8.

The summer day camp of the Association for the Help of Retarded Children, Nassau County Chapter, N.Y., which originally served 35 MR 20 years ago, now enrolls 400, ages 5 to 21 years. The purpose is to provide recreation opportunities for the MR, train and interest both young adults and elementary school teachers in work with the MR, and broaden the experience of teachers by means of the counselor-camper relationship.

Godfrey, Barbara B.
1958. Leadership training in camping for the handicapped. Unpublished Doctoral dissertation: University of Southern California.

Godfrey studied agency-sponsored camps of at least 5 days duration which provided 24-hour custodial care for handicapped children. Questionnaire, opionaire, and interview techniques were used. She found that training literature was limited and that camp directors felt that in camps for the handicapped, mature counselors with high levels of skill in crafts, skits, stunts, games, and campfire activities were needed. Training needs were assessed to be a minimum of 3-4 sessions covering program techniques, information on handicaps, and adapting techniques.

Hayes, Gene A.
1966. Use of Sweat students in a community based summer camp. Project News of the Parsons State Hospital and Training Center 2(July): 19-20.

At Parsons State Hospital and Training Center, 5 college students were assigned to summer camp work under the student work program in mental retardation. The students were provided with a 10-day orientation period before assignment.

Kokaska, Charles J.
1966. Training volunteers for a camp program. Ment. Retardation 4(Apr.): 22-24.

A "domestic Peace Corps" that utilized high school and college-age volunteers for organizing and operating a camping program for institutionalized MR children is described. The volunteers lived at the school throughout the camp program and acted as counselors for the MR girls.

Lainoff, Harold M.
1969. EMR campers gain from regular camp. Camping Mag. 41(Feb.): 24.

A brief discussion of objectives and preparation for integrating EMR campers into the normal camp setting. Emphasis in training staff was placed on philosophy and purpose of integration, techniques of leading groups, and understanding mental retardation.

Lupton, Frank D.
1972. The effects of a behavior management training program on counselor performance in regular day camps which include children with behavior problems. Disser. Abst. Internat. 33(6-A)(Dec.): 2780.

S's were 2 groups of college students matched to grade point average, scores on an attitude inventory, and experience as camp counselors. One group was given a pre-camp training program in behavior management. Both groups were then placed in a day camp with at least 1 behavior problem child in their group. Observers, counselors, and campers rated the counselors at the end of camp. No sig. differences were found between those counselors receiving special training and those who did not.

McAllister, John.
1966. Analysis of selected personality and intellectual attributes of teenage volunteer counselor attendants serving at a residential camp for dependent cerebral palsied. Doctoral dissertation: University of Denver.

A battery of intelligence and personality tests were administered to 58 first-year volunteer counselor attendants at a camp for the cerebral palsied. Found sig. correlations between a number of personality traits and IQ, with females being generally superior in IQ, security, general activity, sociability, and friendliness.

Nayowith, Martin H.
1970. A proposal for training educable mentally retarded adolescents and adults for roles as physical education recreation aides and associates. Am. Corrective Thera. Journ. 24(July): 115-117.

A group of EMR adolescents and adults were taught to assist in the daily activities at a camp for disabled children. The sequenced training program and the on-the-job supervisory techniques used are described in the article.

Nesbitt, John A., and others.
1972. Training needs and strategies in camping for the handicapped. Eugene, Ore.: University of Oregon Press.

Report on the National Conference on Training Needs for Personnel in Camping, Outdoor, and Environmental Recreation for Handicapped Children held Mar. 29-Apr. 1, 1972. Includes position papers, as well as an overall position statement on camping for the handicapped.

Thatcher, Susan.
1945. A counselor looks at camping. Crippled Child 13(Dec.): 141-142.

Discusses qualifications of counselors at Camp Daddy Allen. Author also describes her personal fears and misgivings that she had when she started as a counselor and her feelings at the end of the camping period.

Verven, Nicholas, Schwabb, Edleff, and Young, Robert.
1957. The training of counselors for a treatment camp. Journ. of Soc. Issues 13(1): 54-61.

Camp Wediko (N.H.) is a treatment camp for 9 to 14 year old emotionally disturbed children referred from clinics and social service agencies. Program includes typical camping activities plus group therapy and psychodrama. Staff consists of trained personnel from many fields, as well as graduate students in psychology or social work. An orientation week is held prior to camp. Training includes philosophy, activities, daily procedures, formal treatment methods, and description of each counselor's group and anticipated problems.

Wolf, James M.
1968. Physical facilities for exceptional children in the schools. Canal Zone: Design Specialty, Box 175, Balboa.

A portfolio of materials containing the author's article (9 pp.) of the same title, 13 page bibliography of reference materials collected from state depts. of special education, photocopies of "What You Should Know about Teaching Handicapped Children," (reprinted from School Management) and guidelines for building and equipping special education facilities for children in various categories.

Administration - Program Evaluation

Hartlage, Lawrence C., and Park, David C.
1967. Criteria for evaluation of therapeutic summer camping with the mentally retarded. Psychology 4(1): 2-5.

To evaluate criteria operative in assessments of therapeutic camping, a group of MR campers was rated on the same (Vineland) scale before and after the camping session by ward personnel and camping staff. Before camp, ward ratings were higher than camping staff ratings; after camp, camp staff ratings were higher.

Hartshorn, Marion.
1971. Model for a dual programmed summer day camp for mentally retarded children. Doctoral d ssertation: University of Georgia.

A model formulated from a literature review and expert opinion was put into operation and evaluated by a "panel of experts." The program was a day camp that provided specific activities for development of motor skills as well as providing blocks of time for academic work. The program was evaluated as adaptable to any community.

## Architectural Modifications/Barrier-Free Design

### Standards

American Camping Association.
1972. Camp standards with interpretations for the accreditation of organized camps. Bradford Woods-Martinsville, Indiana: American Camping Association.

Part II-C added in April, 1974, contains camps' standards for camps serving physically disabled persons.

American Standards Association.
1961. American standard specifications for making buildings and facilities accessible to, and usable by, the physically handicapped. Chicago, Ill.: Architectural Barriers Project, National Society for Crippled Children and Adults, 11 pp.

Gives details of specifications for building approaches, ramps, doorways, floor surfaces, drinking fountains, telephones, and warning signals.

Associate Committee on National Building Code.
1965. Building standards for the handicapped, 1965. Ottawa, Canada: National Research Council, 20 pp.

A guide to the design and construction of buildings with provisions for making them accessible to the physically handicapped without assistance. Recommendations concern safety factors to be incorporated in public buildings and in buildings for industry.

Australia Standards Association.
1968. Australian standard code of recommended practice: Design for access by handicapped persons: Part I. Public buildings and facilities. New South Wales: Standards Association of Australia, Standards House, 80 Arthur St., P.O. Box 458, North Sydney, 2060.

A guide for architects, planners, and government authorities. Prepared by the Australian Council for Rehabilitation of the Disabled in association with the Standards Association.

Larsson, Nils, and Kerr, Douglas.
1973. Housing the handicapped. Ottawa,Canada: Central Mortgage and Housing Corporation, Head Office.

This excellent publication is an advisory document dealing with desirable standards of housing for physically handicapped persons. Design criteria developed here are based upon an evaluation of Canadian and international standards and research, as well as the experience Central Mortgage and Housing Corp. has gained in building dwelling units for the handicapped. It is expected that these advisory criteria will be modified in the future.

Netherlands Society for Rehabilitation.
1973. Architectural facilities for the disabled. The Hague, Netherlands: Netherlands Society for Rehabilitation. Also available from ICTA Information Centre, Fack S-161 03, Bromma, Sweden.

Contains some excellent details and specifications for barrier-free construction. Also contains a series of general principles to guide the architect and designer. All specifications are given in metric form.

New York State Department of Conservation.
1967. Outdoor recreation for the physically handicapped: A handbook of design standards. Albany, N.Y.: New York State Dept. of Conservation, State Council of Parks and Outdoor Recreation.

Standards approved and adopted by the State Council cover adaptations that are recommended for existing parks and for all future construction of public outdoor recreation areas in N.Y. state.

United Nations, Department of Economic and Social Affairs.
1962. Basic equipment for rehabilitation centers: Part II. Physical therapy. New York: United Nations Dept. of Economic and Social Affairs, 20 pp.

Covers building requirements, architectural planning, and basic equipment; two floor plans are included.

United States Dept. of the Interior, Bureau of Outdoor Recreation.
1967. Outdoor recreation and space standards. Washington, D.C.: U.S. Dept. of the Interior, Bureau of Outdoor Recreation. Available from U.S. Government Printing Office, Washington, D.C. 20402.

Listing of standards for park and recreation facilities, gathered from a wide variety of authorities, agencies, and organizations throughout the country. Very good bibliographic listing of some prominent authorities in standard specifications.

United States of America Standards Institute. (formerly American Standards Association)
1961. American standard specifications for making buildings and facilities accessible to and usable by the physically handicapped. New York: U.S.A. Standards Institute, 11 pp.

A standard sponsored by the National Society for Crippled Children and Adults and by the President's Committee on Employment of the Physically Handicapped. Standards apply to all buildings used by the public.

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Legislation

Dantona, Robert, and Tessler, Benjamin.
1967. Architectural barriers for the handicapped: A survey of the law in the United States. Chicago: National Society for Crippled Children and Adults, 10 pp.

Findings and evaluations of legislative measures passed in regard to the standards set forth by the American Standards Association (now the USA Standards Institute) for making buildings and facilities accessible to and usable by the physically handicapped. Much of the legislation is inadequate to achieve elimination of architectural barriers.

Diamond, Sondra.
1974. Winning a bill of rights for the disabled. Student Lawyer (Oct.): 21-24.

Ten rights of the handicapped are listed and explained in this brief statement.

Gallis, Ann, and Susman, Keith M.
1973. Abroad in the land: legal strategies to effectuate the rights of the physically disabled. Georgetown Law Journ. (July): 1506-1512. (Reprinted with permission and available from the President's Committee on Employment of the Handicapped.)

Excellent article with a statement on accessibility to buildings and transportation, but with the additional feature of reference to legislative and court decisions affecting changes for the mobility problems of the handicapped. Many court cases are detailed.

National League of Cities, Department of Urban Studies.
1967. State and local efforts to eliminate architectural barriers to the handicapped, 1967. Washington, D.C., 162 pp.

Describes and evaluates legislative and other official actions of state and local governments designed to eliminate architectural barriers. It examines activities and attitudes of certain non-governmental agencies and private citizens as they relate to the effect of barriers on people who are disabled. Report includes in-depth case studies of 7 cities that have initiated or supported architectural barrier removal programs.

President's Committee on Employment of the Handicapped.
1973. Survey of state laws to remove barriers. Washington, D.C.: President's Committee on Employment of the Handicapped.

This booklet contains information indicating whether existing state legislation to remove barriers in public buildings have enforcement provisions, whether they apply to public-use buildings as well as publicly funded buildings, and whether there are waiver clauses.

Sorkin, Nathaniel (Judge).
1973. Equal access to equal justice: A civil right for the physically handicapped. Case and Comment (March-April).

Argues that access is implicit in the concept of equality under the law, and that when public buildings are constructed with architectural barriers there is patent discrimination, unwitting and unwillful as it may be.

State Architect of California.
1974. Check list and graphic illustrations. San Francisco: California Council, The American Institute of Architects.

Prepared by the state architect to assure compliance with the state law regarding barrier-free design of buildings constructed with public funds.

United States Congress, House of Representatives.
1970. Committee on public works, design, and construction of facilities to be accessible to the physically handicapped. Washington, D.C.: U.S. Government Printing Office.

Hearing before the Subcommittee on Public Buildings and Grounds on HE 14464 to amend the Act of Aug. 12, 1968, to insure that certain facilities constructed under the authority of federal law are designed and constructed to be accessible to the physically handicapped. 91st Congress, First Session, 91-92, Dec. 9, 1969.

United States Department of Health, Education and Welfare.
1972. Design and construction of buildings financed with federal funds. Washington, D.C.: Dept. of Health, Education and Welfare, Social and Rehabilitation Service.

Fact sheet on Public Law 90-480 is available here.

Design

American Camping Association.
1968. Ingenuity brings camp to more kids. Camping Mag. 40(Sept./Oct.).

Discusses building two-story facilities so that they can be entered on ground level on both floors. Also, heating a swimming pool and providing ramps for wheelchairs are highlighted.

American Institute of Architects, Potomac Valley Chapter.
1968. Barrier free architecture. Washington, D.C.: American Institute of Architects, Potomac Valley Chapter, Committee on Architectural Barriers.

Report of a task force whose assignment was to explore and test means of reaching architects and others who influence building decisions, with concepts and usable materials which can be translated into decisions for barrier free architecture.

American Journal of Nursing.
1965. Camps for children with muscular dystrophy. Am. Journ. of Nsg. 65(June): 76-77.

A pictorial presentation of some characteristics of camps that accomodate children with MD.

American Society of Landscape Architects Foundation and U.S. Dept. of Housing and Urban Development - Office of Policy Development and Research.
1974. Barrier free site design. Washington, D.C.: U.S. Government Printing Office, 82 pp.

Background study, laws and legislation, cost-benefit ratios to designers, and recommended design details for architectural barrier free design for the handicapped. Several Appendices cover current legislation, government publications and research, foundation publications, and individuals and organizations contacted for information.

Avedon, E.M.
1966. Outdoor facilities for the aged or disabled. Parks and Recr. 1(May): 426-429.

Gives many guidelines that could assist recreation planners to develop new facilities. It lists several activities, limitations, and how facilities such as picnic areas, swimming pools, telephones, toilets, and cafeterias could be adapted for their use.

Bryant, Daniel C.
1964. Designing for the mentally handicapped. Chicago: National Society for Crippled Children and Adults, 3 pp.

Design elements to be considered in planning a school or training center for the mentally retarded are covered. The article deals specifically with the plans for the Shore School and Training Center in Evanston, Ill., a total training and vocational adjustment center opened in 1962 and now being enlarged.

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Canadian National Research Council.
1965. Building standards for the handicapped. Ottawa, Canada: National Research Council, Associate Committee on the National Building Code, 20 pp.

A supplement to the National Building Code of Canada, written as a guide to those interested in design and construction of buildings with provisions for making them accessible to the physically handicapped. Includes alteration information and general information on wheelchair dimensions and functioning.

Central Mortgage and Housing Corporation.
1973. The design and use of space in the home. Ottawa, Canada: Central Mortgage and Housing Corp.

A study which establishes space and equipment criteria for residential needs.

Chatelain, Leon, Jr.
Architectural barriers - a blueprint for action. Chicago: National Society for Crippled Children and Adults. (mimeograph; out of print)

Written by the past president of AIA. Discusses the American Standards Association publication, "Making Buildings and Facilities Accessible to and Usable by the Physically Handicapped." Cites existing statistics, conditions, lack of awareness, and architectural problems concerning barriers.

Consumer Product Design.
1974. Industrial Design Mag. (May): whole issue.

Contains large section on barrier free design, with emphasis on the design of products so they can be used by persons with handicaps. Industrial designers are made aware of problems faced by persons who are manipulatively handicapped and who are expected to handle products which were not designed for people, "but merely engineered down through time by new materials and new methods." Doorknobs offer one example.

Dethlefs, Ted.
1971. Modifications for the handicapped person in outdoor recreation. Thera. Recr. Journ. 5(2): 72-74, 97.

Specific construction modifications for outdoor facilities, special use facilities, and for illustrative facilities for the disabled are included.

Georgia Department of State Parks.
Outdoor recreation facilities for the disabled. Atlanta, Ga.: Georgia Dept. of State Parks. (mimeograph)

Describes and illustrates a proposed park for the handicapped at Yargo State Park, Georgia. Architectural as well as site plans are well illustrated.

Goldsmith, Selwyn.
1967. Designing for the disabled, 2nd. ed. New York: McGraw-Hill.

Research conducted since the publication of the first edition has caused author to change his philosophy in regard to the "normality and independence" of the physically handicapped. This revision places the emphasis more on public buildings than domestic housing.

Goldsmith, Selwyn.
1963. Designing for the disabled. London, W.1., England: Royal Ins itute of British Architects, Technical Information Service.

A basic reference book for architects and designers; it is probably the most elaborate treatment of the subject to date. Major emphasis is on problems in the home. The general checklist is valuable in planning housing alterations to accomodate a disabled person. Although it is written for British standards, variations from American standards are not great.

Goodwin, Henry E., and Gross, Elmer A.
1958. How handicapped campers can fit into regular programs. Camping Mag. 30(Dec.): 18-19.

This article describes the slight modifications needed for physically handicapped children to participate in a regular camping program.

Gordon, Ronnie.
1972. The design of a pre-school therapeutic playground: An outdoor "learning laboratory" (Rehabilitation Monograph 47). New York: Institute of Rehabilitation Medicine, New York University Medical Center.

This special playground was designed to provide maximum opportunities for pre-school handicapped children to interact with an outdoor environment, experiencing a variety of learning situations and peer relationships that would otherwise be difficult to achieve. Includes verbal descriptions, photographs, and line diagrams of the areas and equipment on the playground.

Gutman, Ernest M., and Gutman, Carolyn R.
1968. Wheelchair to independence: Architectural barriers eliminated. Springfield, Ill.: Charles C. Thomas.

Aimed primarily at the elimination of architectutal obstructions that adversely affect users of wheelchairs.

Hodgen, Earle.
1968. Recreation program for the handicapped needed. Illinois Parks Publication (March/April).

Article points out the lack of interest in many parks to make their facilities accessible to the handicapped. Lists recreational objectives for these people and the need to organize committees in order to accomplish objectives. Provides a sound administrative program for conducting recreational facilities for the handicapped.

Hoffman, Ruth.
1971. How to build special furniture and equipment for handicapped children. Springfield, Ill.: Charles C. Thomas.

Principles are presented that can be applied to building inexpensive equipment out of scrap wood with a few tools.

Interior Design Student at Northern Illinois University.
1975. Access Chicago. Chicago: Rehabilitation Institute of Chicago, 345 East Superior.

This booklet is a basic guide to the elements of barrier free design which should be incorporated into buildings. Copies can be ordered from the above address.

International Society for Rehabilitation of the Disabled.
1962. ISRD conference: The physically disabled and their environment. Stockholm, Oct. 12-18, 1961; Report of the proceedings.

Contains conference discussions on architectural planning of homes for the disabled, homemaking methods, technical aids in laundering and cooking, clothes and their care, with additional information in appendices on house design and financing of housing.

Kira, Alexander.
1967. The bathroom: criteria for design. New York: Bantam Books.

The results of a 7 year study at the Cornell University Center for Housing and Environmental Studies. Its aims were a thorough investigation of the hitherto largely unexplored problems of personal hygiene and the basic criteria and parameters for the design of facilities to accomodate these activities.

Lunan, Bert.
1968. Georgia is building park for handicapped. ICRH Newsletter 3(9): 1,3.

Georgia's proposed state park for the handicapped and their families will include 3 areas - a group camp (private but connected by bridge to the rest of the area), a day-use area (with concessions, game facilities, restrooms, bathhouse, picnic areas, nature trail, and fishing), and a family cottage area. Construction of all facilities will be made with the limitations of the handicapped in mind.

Muller, Henrik.
1961. City suburb and environment for disabled persons - a study of Hogdalen. Stockholm, Sweden.

Describes the way in which a built-up area can be rendered suitable for the disabled. Recommendations for community planning set forth in this report are the results of tests conducted with a person in a wheelchair in the Stockholm suburb of Hogdalen.

National Building Code of Canada.
1970. Building standards for the handicapped 1970. (A supplement to the National Building Code of Canada.)

This supplement is designed to minimize barriers and thus assist the handicapped to make their rightful contribution to the nation's activities and economy. First published in 1965, the 1970 edition provides up-to-date material and includes a new chapter on housing.

Nellist, Ivan.
1970. Planning buildings for handicapped children. Springfield, Ill.: Charles C. Thomas.

Information for designers and others concerned with the environment of mentally handicapped children. Describes the field, indicates solutions and features which have been found to work well, and suggests promising lines for further development. Focuses on schools in England.

Nugent, Timothy J.
1961. Design of buildings to permit their use by the physically handicapped. New Building Res. (Fall 1960): 51-66.

Proceedings of a conference held as part of the 1960 fall conferences. Reports on how existing buildings can be adapted for use by the handicapped and includes research for construction of new buildings. Gives a checklist for design considerations from American Standards Association.

Paralyzed Veterans of America.
1959. Wheelchair houses. Washington, D.C.: Paralyzed Veterans of America.

This covers general considerations in design of housing for those in wheelchairs. Also distributed by the same organization is "Housing for the Chairborne."

Resnick, Rose.
1972. The specialized camp as preparation for integration. New Outlook for Blind 66(Dec.): 374-376.

Adaptations of normal camping situations, including specially trained staff and barrier-free design, are discussed in terms of providing specialized camping experiences for blind children. The importance of such experiences for future integration into regular camp and other situations is stressed.

Schoenbohm, W.B.
1962. Planning and operating facilities for crippled children. Springfield, Ill.: Charles C. Thomas.

Provides helpful information on building and operating special facilities for children with crippling disabilities. Can be most useful to those responsible for building such facilities. Discusses the selection of an architect, importance of choosing the correct site, and the aspects of alteration in the construction of such facilities. A selection of camps for crippled children in also included.

Texas A & M University.
1971. Environmental criteria: MR pre-school day care facilities. College Station, Texas: Research Center, College of Architecture and Environmental Design, Texas A & M University.

Intended as a working document for educators, administrators, architects, and designers who are developing pre-school day care facilities for mentally retarded, culturally deprived, and normal children. Provides planning and design guidelines for the creation of a physical environment that will effectively implement the pre-school program.

United Nations, Department of Economic and Social Affairs.
1964. Basic equipment for rehabilitation centers: Part III. Occupational therapy. New York: United Nations, Dept. of Economic and Social Affairs.

Contains suggestions on planning space and equipment for occupational therapy departments; sample floor plans of departments in 5 different countries are included.

United States Department of Health, Education and Welfare.
1967. Design for all Americans. Washington, D.C.: U.S. Dept. of Health, Education and Welfare, National Commission on Architectural Barriers to Rehabilitation of the Handicapped.

This report attempts to determine to what extent architectural barriers impede access to buildings and facilities, and what is being done to eliminate such barriers and to prepare plans and proposals to achieve barrier free access. Includes a bibliography on publications related to design for the handicapped.

United States Public Health Service, Division of Hospital and Medical Facilities.
1966. Design of facilities for the mentally retarded; diagnosis and evaluation, education and training, living units. Washington, D.C.

Concerns facilities providing direct services (both day and residential). Sections deal with programming, writing the program project, design concepts (including site development), types of physical facilities and individual elements of facilities required to accomodate the wide range of services and disciplines. Basic planning considerations and costs are discussed briefly. Floor plans are given for various types of centers, sheltered workshops, and living units for ambulatory and non-ambulatory.

Walter, Felix.
1971. Sports centers and swimming pools: A study of their design with particular reference to the needs of the physically disabled. London, W.14, England: Thistle Foundation, The Disabled Living Foundation.

Considers in detail what modifications in planning and design would help disabled people to participate in or watch recreation activities. Based on visits to centers in Britain, Finland, Norway, and Sweden.

Yuker, Harold E., Cohn, Alfred, and Feldman, Martin A.
1966. The development and effects of an inexpensive elevator for eliminating architectural barriers in public buildings. Hempstead, N.Y.: Hofstra University.

Contains a review of the literature on architectural barriers and their elimination; education and rehabilitation of the disabled; and a description of Hofstra's program for higher education of the disabled. Architect's specifications for the lifts installed are given.

Mobility

Barrier Free Buildings for New Jersey.
1974. Curb Buster (Newsletter of Barrier Free Buildings for New Jersey). New Brunswick, N.J.: Alan P. Kemp, Coordinator, 9 Terminal Road.

From this newsletter we learn that the Engineering Dept. of the New Jersey Turnpike Authority has received approval of funds to renovate 12 existing rest areas along the turnpike to make them accessible to handicapped travelers. A copy of this newsletter may be obtained from the above address.

Gordon, Ronnie.
1969. The design of a pre-school "learning laboratory" in a rehabilitation center (Rehabilitation Monograph 49). New York: New York University Medical Center, Institute of Rehabilitation Medicine.

The pre-school program at IRM is designed to fulfill therapeutic diagnostic and evaluative research and teaching roles. Details are given of the room, space allocations for activities, a window unit, housekeeping unit, work space accessible to handicapped children, and the use of handrails.

Government Services Administration.
1975. Day on wheels. Washington, D.C.: Public Buildings Service/ Government Services Administration.

Reports on the orientation of young designers to the needs of handicapped. Includes a section where the architects spend days in wheelchairs to study architectural barriers and barrier free design. Fully illustrated with bibliography.

Hodgeman, Karen, and Warpeha, Eleanor.
1973. Homemaking aids for the disabled. Minneapolis, Minn.: Sister Kenny Institute, Publications Dept.

This manual suggests equipment and techniques for the homemaker who uses a wheelchair, for the person who can use only one hand, and for anyone whose ability is limited by weakness or incoordination. Presents a general approach to simplifying housework, as well as specific directions for accomplishing certain tasks. Adaptive devices are shown and directions given for constructing and purchasing equipment.

Lowman, Edward W., and Klinger, Judith L.
1969. Aids to independent living: Self-help for the handicapped. New York: Blakiston Division, McGraw-Hill.

This encyclopedic reference work is the culmination of almost 2 decades of testing, designing, and development at the Institute of Rehabilitation Medicine, New York. 2,237 illustrations and 9 main categories cover housing, furniture and posturpedic equipment, homemaking, and travel.

May/Waggoner/Hotte.
1974. Independent living for the handicapped and elderly. Boston, Mass.: Houghton Mifflin.

Very complete and interesting book on adaptations for equipment, clothing, household conveniences, tools, etc. for the handicapped. Attends to all areas of life, including the task of teaching early independence to the children of handicapped individuals.

Millar, Clare.
1974. Wheelchair air travel. Ontario, Canada: Clare Millar, Box 7, Blair, Cambridge, Ontario Canada.

Complete with cartoons and illustrations, this book contains helpful hints for handicapped persons wishing to venture by plane to faraway places.

President's Committee on Employment of the Handicapped.
1974. Performance (June): whole issue.

This issue focuses on the handicapped people of the U.S.S.R. Provides interesting glimpses into the lives of these people - mobility, jobs, architectural modifications being made.

President's Committee on Employment of the Handicapped.
1974. You can't get there from here. Journ. of Am. Insurance (reprinted with permission.)

Deals with man-made barriers that limit the mobility of the handicapped. The American Mutual Insurance Alliance has made reprints of this article available through President's Committee.

Selwyn, Donald.
1966. Independence for the severely handicapped through systems engineering. Washington, D.C.: President's Committee on Employment of the Handicapped.

Shows how systems engineering can be applied on an individual basis to meet the needs of almost any person with a severe handicap. Plans of a typical office layout and equipment for a quadriplegic and for living arrangements requiring only shared, part-time, non-resident attendant services are also included.

Shivers, Jay S.
1970. Rationale for an outdoor recreational learning facility for the mentally retarded. Thera. Recr. Journ. 4(Second Quarter): 26-32.

Describes the design of an outdoor education area at the Mansfield State Training School in Conn., a state school for the mentally retarded. The article contains general guidelines for choosing equipment and surfaces and designing the instructional areas.

Sleed, Joel.
1974. Improving travel for the handicapped. Washington Post(November 3): E14.

Describes services rendered by transportation companies such as AMTRAK and International Passenger Ship Association. Emphasizes that if companies are given advanced notice of the special needs of the handicapped and elderly passengers, special accomodations will be made.

United Nations, Department of Economic and Social Affairs.
1962. Basic Equipment for rehabilitation centers: Part I. Artificial limbs and braces.

Covers floor plans and equipment for the operation of workshops for artificial limbs and braces.

United States Department of Transportation.
1972. Public transportation for the elderly and handicapped. Washington, D.C.: Urban Mass Transportation Administration, Dept. of Transportation.

A compilation of the efforts undertaken by the U.S. Dept. of Transportation to meet the transit needs of the handicapped.

Van Cott, Harold P., and Kinkade, Robert G., eds.
1972. Human engineering guide to equipment design (revised ed.). Washington, D.C.: Army-Navy-Air Force Steering Committee, American Institute for Research.

Contains chapters on various aspects of human engineering and design considerations for use in government and military systems.

Wheeler, Virginia Hart.
1965. Planning kitchens for handicapped homemakers (Rehabilitation Monograph 27). New York: New York University Medical Center, Institute of Physical Medicine and Rehabilitation.

A publication designed for the severely disabled woman who requires substantial change in her kitchen to return to full-time housekeeping. Includes floor plans, photos, and discusses the most ideal compromises on space and money.

Directories and Guides

American Institute of Architects, Task Force on Architectural Barriers.
1968. The real man. Washington, D.C.

Contains measured drawings of the wheelchair, parking lots, doorways, drinking fountains, stairs, restrooms, showers, and public restrooms.

Bay Area Rapid Transit.
1973. Guide for commuters in wheelchairs. Oakland, Calif.: Bay Area Rapid Transit Authority.

This guide is available for commuters in wheelchairs to familiarize them with the new accessible rapid transit system operating in and around San Francisco.

British Airports Authority.
1973. Who looks after you at Heathrow Airport? London, Eng.: British Airports Authority.

Designed for disabled travelers, this booklet tells where to look for assistance and contains maps of the terminal buildings which have restrooms offering a choice of left-hand transfer, right-hand transfer, or frontal transfer from wheelchair.

British Standards Institution.
1967. Access for the disabled to buildings: Part I. General recommendations. London, W.1, England: Council for Codes of Practice, British Standards Institution.

Defines categories of disabilities and types of buildings covered by the code (individual dwelling units excluded.) Makes general recommendations on design principles and provisions, with 10 pages of diagrams illustrating design principles.

Canadian Paraplegic Association.
1974. Caliper (Spring): whole issue.

Devotes much space to a list of hotels, motels, and resorts (more than 400) which are of interest to wheelchair travelers. The compilation contains addresses, width of bathroom doors, information about accessible dining facilities, and other relevant instructions.

Carroll, Arthur J.
1973. Efforts to adapt national forest recreation areas for use by the handicapped. Thera. Recr. Journ. 7(First Quarter): 41-45.

Discusses the needs of the disabled as they relate to the design and construction of all recreation facilities on National Forest Lands. An inventory of forest facilities that meet these needs is given.

Chicago Department of Aviation.
1975. Airport guide for the handicapped and elderly. Chicago, Ill.: Chicago Dept. of Aviation, Room 1111, City Hall.

This is a guide to O'Hare International Airport. It includes a map of entrance ramps, parking facilities, accessible washrooms, lower telephones, and lists the numerous services and facilities available to handicapped and elderly passengers.

Edgington, Eugene S.
1963. Colleges and universities with special provision for wheelchair students. Journ. of Rehab. (May/June): 14-15.

Report in tabular form of 58 colleges and universities with special provisions for students in wheelchairs.

Gordon, John E.
1974. Guide to recreational facilities in Philadelphia for developmentally disabled persons (Developmental disabilities project). Philadelphia: Temple University, Krusen Center for Research and Engineering, Moss Rehabilitation Hospital.

Contains a complete listing of recreational programs and facilities for developmentally disabled persons in Philadelphia County.

Illinois Division of Parks and Memorials.
1973. Facilities for the physically limited and handicapped. Springfield, Ill.: State of Illinois, Division of Parks and Memorials.

This booklet catalogues the 82 state parks and 29 historical memorial areas as to their accessibility for the handicapped. Although not all of Illinois' public recreation facilities can meet the needs of the handicapped, efforts have been made for all new facilities projected or under construction to be designed with provisions for the handicapped.

Klebe, Edward R.
1971. Federal programs for the handicapped. Washington, D.C.: Congressional Research Service - Library of Congress.

In this book is contained a listing of the federal programs to date which are available to the handicapped. Included also are construction principles for rehabilitation facilities.

Lassen, Peter L.
1973. Barrier free design: a selected bibliography. Washington, D.C.: Business School Students at the Woodrow Wilson Rehabilitation Center. (Available from the Capital Area Chapter of the Paralyzed Veterans of America).

Comprehensive bibliography with such chapters as standards, planning, articles and periodicals, transportation, housing, legal and legislative publications, directories, and bibliographies.

Loison.
1974. Europe handicap. Paris, France: Descombes, Paris 75 017.

A special travel guide to France conceived of for the physically handicapped in wheelchairs as well as the semi-ambulatory. English and French versions available.

National Park Service.
1972. The national park guide for the handicapped. Washington, D.C.: National Park Service.

This guide rates 242 park areas on their accessibility to persons in wheelchairs and describes special facilities for the deaf and blind, such as braille trails, contour exhibits, and audio programs.

President's Committee on Employment of the Handicapped.
Guidebooks for handicapped travelers, 3rd. ed. Washington, D.C.: The Committee.

This pamphlet contains a list of the metropolitan guidebooks for 85 cities plus several foreign countries, as well as the addresses from which copies of the individual guidebooks may be obtained, usually for no charge.

President's Committee on Employment of the Handicapped.
1966. Guide to the national parks and monuments for handicapped tourists. Washington, D.C.: The Committee.

Intended as an aid in planning trips, the guide contains information obtained from a questionnaire survey of more than 200 units of the National Park Service. The sad fact is that a great majority of the sites of interest are inaccessible, emphasizing the need for elimination of architectural barriers.

Rehabilitation Institute of Chicago.
1974. Access Chicago. Chicago: Rehabilitation Institute of Chicago.

This is the 90th guide to public facilities accessible to the handicapped. These guide books now offer travelers a wide choice of cities and communities across the country, with directories of accessible focal points and local hangouts.

Sawyer, Ernest H., ed.
1968. Where turning wheels stop. Washington, D.C.: Paralyzed Veterans of America.

Lists hotels and motels and restaurants accessible to wheelchair users, along with traveling tips.

Schweikert, Harry.
1972. Guide for the wheelchair-bound. Washington, D.C.: Paralyzed Veterans of America.

A guide to the John F. Kennedy Center for the Performing Arts written for the disabled. The Center features many aspects of barrier-free design in its parking facilities, Opera House, Concert Hall, Eisenhower Theatre, and restaurants.

Seattle Mayor's Committee on Opportunities for the Handicapped.
1974. Special access map for the Seattle-Tacoma airport. Seattle, Wash.: Mayor's Committee. Available from Easter Seal Society for Crippled Children and Adults, 521 Second Ave. West, Seattle, Washington 98119.

This special map is being distributed to travel agencies and airline ticket offices in the state. It describes locations of entrances and facilities designed for the handicapped and elderly.

Swiss Invalid Association.
1970. Guide des hotels pour handicapes. Froburgstrasse 4, 4600 Olten: Swiss Invalid Association and Swiss Hotelkeepers' Association.

Printed in 3 languages, this hotel guide for the disabled states that "The disabled are also entitled to holidays, but up til now architectural obstacles often made holidays impossible." Facilities are in three categories: hotels for wheelchair users, hotels for those who are severely handicapped in walking, and hotels for those who are slightly handicapped in walking.

Tucker, William V., ed.
1964. Higher education and handicapped students: an administrative handbook. Kansas: Kansas State Teachers College.

A guide for university personnel in developing plans and procedures for accomodating handicapped college students; developed from a survey of schools of higher education throughout the nation.

United Cerebral Palsy Association.
1973. Carriage of the physically handicapped on domestic and international airlines. New York: United Cerebral Palsy Association.

A manual which lists the policies of 35 domestic and international airlines relating to the acceptance and transportation of the physically handicapped. The services provided by each airline for handicapped passengers are also identified.

United States Department of Health, Education and Welfare.
1968. Mobility for handicapped students. Washington, D.C.: Rehabilitation Services Administration, U.S. Dept. of Health, Education and Welfare.

Lists institutes of higher education that can accomodate disabled students and includes a checklist of their barrier-free features.

United States Department of the Interior.
1971. Recreation park guide for the handicapped. Washington, D.C.: U.S. Dept. of the Interior, National Park Service.

Specific description of accessible areas on a state-by-state basis. Also lists other publications.

Volta Review.
1962. Summer camps for deaf children. Volta Rev. 64(Apr.): 192-199.

This is a list of 70 camps that specialize in camping for the deaf. Some of the camps listed are integrated camps.